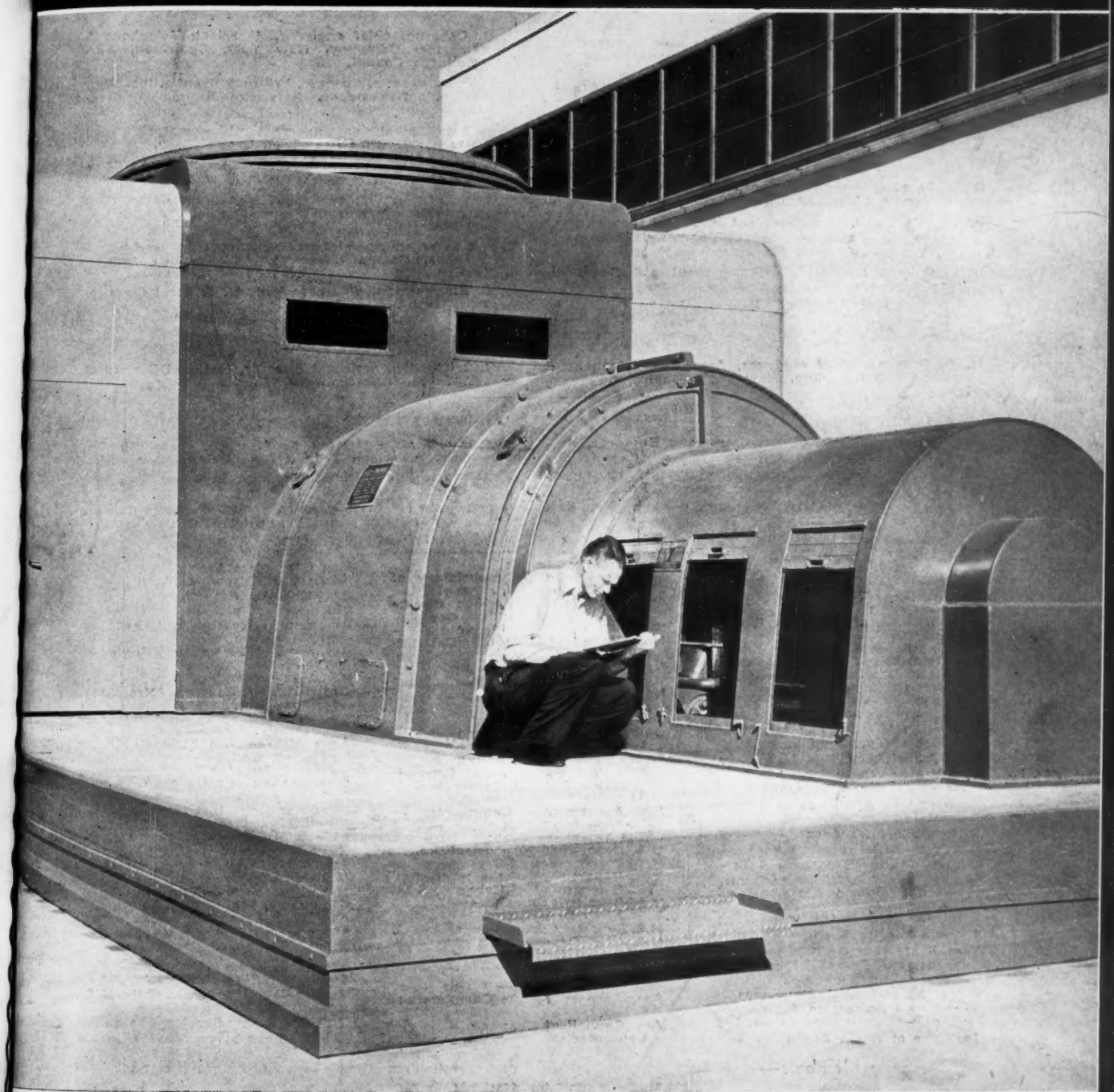
Industrial

Standardization

and Commercial Standards Monthly



June

Revised Standard Is Completed for Rotating Electrical Machinery

(See Article on Page 183)

1943

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Industrial Standardization

And Commercial Standards Monthly

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with the cooperation of the National Bureau of Standards

RUTH E. MASON, Editor

Our Front Cover: A 10,000 kw outdoor self-covered steam turbine generating unit. *Allis Chalmers Manufacturing Company.*

This Issue

ASA

Reg. in U.S. Pat. Off.

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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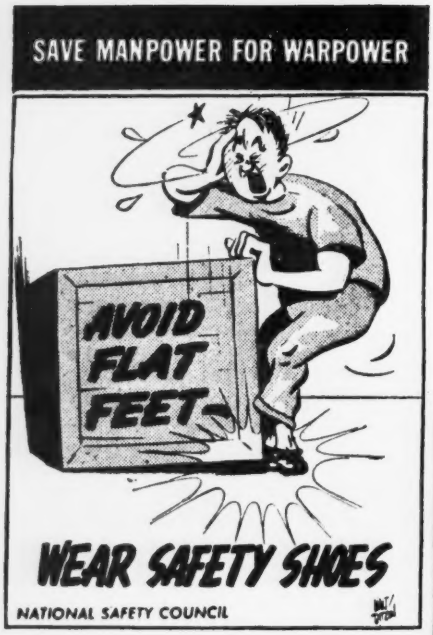
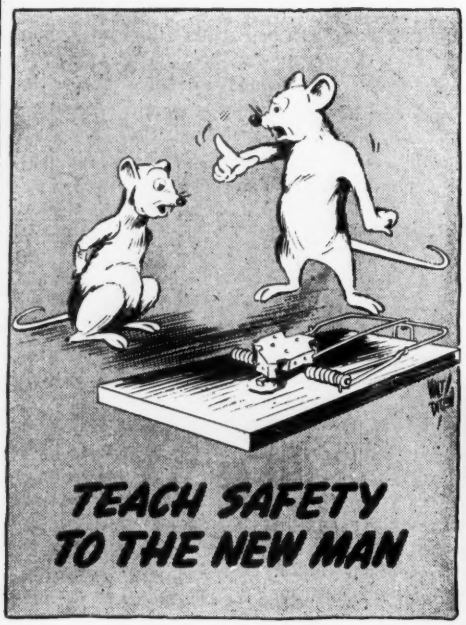




Cartoons are an effective device in industrial safety education.

How the Cause Code Helps Prevent Accidents

Accident Analysis Determines Reasons And Suggests Methods of Control

by D. A. Moore[1]

THE American Standards Association introduced the Accident Cause Code in 1937 for trial. In the beginning the Code appealed to many of us as "just another attempt" to obtain uniform accident statistics on a more accurate and scientific basis. Consequently, industry in general was somewhat reluctant to explore the potentialities of the Cause Code even if it were to be used only as a better means of record keeping. Individual companies which had organized their own safety departments had developed over a period of years standards of recording accident experience which seemed best to meet their own needs.

Cause Code Offers New Technique

In spite of this discouraging history of passive resistance, the American Standards Association, under the enthusiastic guidance of our chairman,[2] persisted in the belief that the Cause Code offered many avenues of attack on the accident problem, and that its use would give a new meaning to the entire industrial accident prevention movement. Industrial horizons for accident prevention work do change, especially if actively stimulated by earnest disciples of the safety movement, and the realization slowly began to dawn on some of us that the Cause Code might offer a new technique, not only for gathering statistical data, but even for training accident investigators in the performance of a more thorough accident prevention job. Such a job in time might challenge the interest of every safety man and woman not merely in an academic way, but as a hard factual influence upon the entire safety program.

The fact that fatal and non-fatal accidental injuries are increasing in industry, plus a growing concern over the shortage of experienced industrial help and a greater need for conservation of manpower and womanpower, has now prompted a more serious consideration of the scientific method of coding causes of accidents. It is recognized that it is essential to isolate and correct quickly failures which not only reduce manpower but also limit production and impair efficiency so desperately needed in the war effort. Moreover, the flood tides of the accident trend may not as yet have been reached, and whether we can stem the rise will depend, first, on our understanding of the causes of the danger, and second, on how rapidly and effectively we can marshal our resources and direct our attack toward curbing the increasing number of industrial accidents which seem to flourish on war-time dislocation and confusion.

Obviously, I cannot describe how industries in general use the Cause Code, but I can tell how it has been applied at the Hawthorne Works of the Western Electric Company, where it has been in operation on an experimental basis since the beginning of 1941.

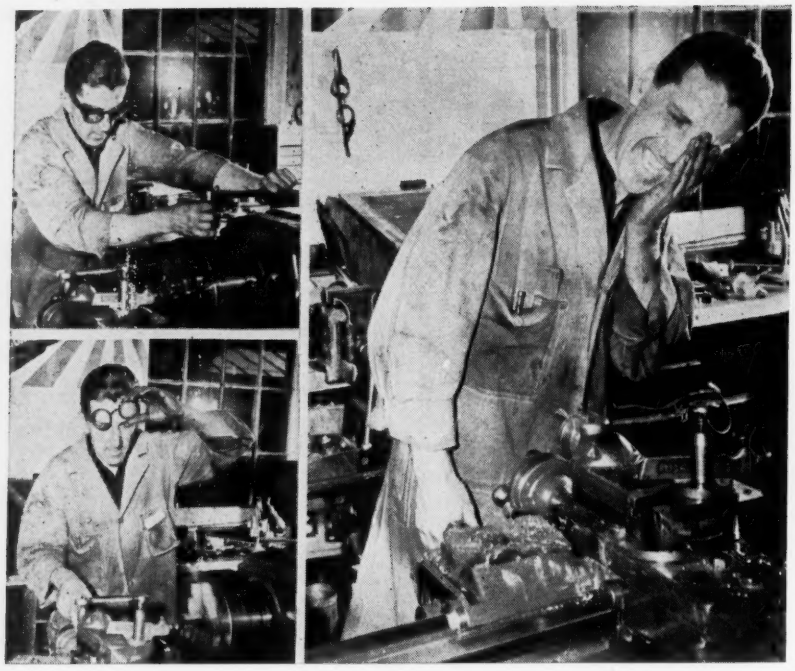
Accidents Can Be Controlled

There is nothing mysterious about industrial accidents and there is no need to assume that all industrial accidents are completely beyond our ability to control. The important issue is whether the shaping and controlling of our safety activities will cease to be a matter of mere habit and custom, and will become instead a matter of conscious, planned effort. This objective points clearly to the reasons for the Cause Code and the several purposes for which the Code was created:

1. It can serve as an effective medium for increasing the efficiency of accident investigations by training even an average investigator to search

[1] Hawthorne Plant, Western Electric Company, Chicago, Ill. Mr. Moore presented this address at the Fourteenth Annual Safety Convention and Exposition of the Greater New York Safety Council, March 24.

[2] Dr. Leonard W. Hatch is chairman of ASA Sectional Committee on Compiling Accident Statistics (Z16).



Accident Analysis

Unsafe Personal Factor:

Failure to wear safety goggles (80)

Poor judgment (14)

Occupational Hazards

for the selected accident factors listed in the Cause Code. These factors are:

Agency and Agency Part
Accident Type
Unsafe Mechanical and Physical Condition
Unsafe Act
Unsafe Personal Factor

By concentrating on these few accident factors, the Code serves as a basis not only for training accident investigators but also for setting up minimum standards for accident investigation work.

2. The Code can serve as a guide in selecting a specific point of attack upon individual accident problems. This offers not only additional protection to employees, but also furnishes a sound basis for the safety training of employees as well as supervisors.

3. The Cause Code can furnish national and state agencies with enough pertinent accident cause data for dissemination on a national basis. This should prove beneficial in launching a national safety educational program.

4. The fourth purpose is often overlooked as not of direct interest to industry. It is that information furnished by industries through their great accumulations of cause data can be used for training purposes in our secondary schools and colleges. Stack and Siebricht, affiliated with the Center for Safety Education of New York University, point out in their recent book, *Education for Safe Living*, that accident prevention instruction should be based on the presumed hazards of an eventual industrial environment, rather than on the relatively non-hazardous activities of the school. Where can the schools obtain such information? The answer is obvious—we in industry must supply it. The outlook for such cooperation between our schools and industry is not as dark as it might appear. Such a spirit of cooperation should foster the influx of safety-minded young men and young women into industry, with obvious immediate advantages.

In order to use the Cause Code effectively, the investigator must be trained to state the cause of the accident in terms of Unsafe Mechanical and Physical Conditions, or Unsafe Acts, or both; or in terms of Unsafe Acts and Unsafe Mechanical or Physical Conditions, or both. For practical purposes a cause can be considered to be given correctly if a practical and definite recommendation can be made on the basis of the accident report for the elimination of a physical hazard or for the correction of an unsafe practice. As an example, I shall quote you a few cases from the Hawthorne Works' January Disabling Injury Reports. These Reports represent the worst of our experience rather than a representative cross-section, because our frequency rate for 1942 was favorable at 4.43 per million hours worked as compared to the 7.5 rate in the Chicago area. All this while we were running on a "round the clock" basis in 1942.

These actual case histories illustrate Point No. 2 in the list of purposes given above, that the Code serves as a guide in selecting a specific point of attack upon accident problems. The corrective action recommended in these reports is referred to the functional engineer or the works

service inspector or whoever else in the plant organization is directly responsible for the correction of the specific incident or mechanical part thereof which is the cause of the personal injury.

The third point, that the Code can furnish national and state agencies with pertinent and uniform accident cause data for dissemination on a national basis, needs no further comment.

The fourth point has already been covered in detail.

Two years experience with the Cause Code has been of advantage to the Hawthorne Works in rediscovering why our employees commit certain unsafe acts. This is demonstrated when we cross-classify the specific unsafe acts with their related specific unsafe personal factors. This clue as to why employees engage in unsafe acts or work habits has been important in taking specific remedial action. Furthermore, it gave a lead as to where our training efforts should be directed. For example, in our induction safety talk to new employees (given in our Safety Personal Protective Equipment Storeroom within 24 hours after employment), we have been able, with material based on the data collected, to point out what we are trying to guard against and to emphasize in these talks what employees are expected to do to prevent injuries.

By the same method, specific training data has been accumulated for absorption by our supervisory force and other employees. Furthermore, information has been given immediately to those responsible for correcting the cause of accidents.

Temporarily correcting unsafe acts is not always enough because, from a long-range point of view, the big job is to overcome and eliminate the unsafe personal factors which permit or occasion unsafe acts on the part of employees, whether these unsafe personal factors be mental, emotional, or physical in nature. This, of course, leads us into the fields of personnel placement and therapeutic treatment, which are not unrelated to a good, all around safety job.

Lest any impression be gained that the Cause Code reduced to the five factors is over-simplified, let me say at this point that we have amplified the code somewhat to meet our local needs. For example, in the cases cited below, we do give the age, service, shift, month of injury, day of injury, payroll and the sex, the building number, the building floor, the occupation, the organization, days of disability, degree of injury, type of injury, location of injury, the responsibility, corrective measures, etc. Basically, however, the five factors are paramount in determining the cause on which corrective action is taken. Our report is summarized monthly, semi-annually, and yearly for the obvious purpose of determining answers to plant-wide questions which naturally arise. For example, we know that in

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The American Standard, Compiling Industrial Accident Causes (Z16.2-1941), discussed by Mr. Moore in this article, consists of two parts. Part 1 is on Selection of Accident Factors, and provides simple rules for the analysis and selection of accident factors which are intended to provide uniformity in presentation of statistics. The method was designed to meet the needs of types of organizations varying from small industrial establishments with only a few accidents a year to those of a State industrial commission handling annually more than 100,000 disabling injury cases.

Part II gives a Detailed Classification of Accident Factors including numbers assigned to each item as statistical aids. Such numbers are of maximum aid to organizations handling large numbers of accident reports, such as industrial commissions or workmen's compensation boards. The numerical arrangements follow the decimal system and were developed particularly to fit the convenience of machine tabulation.

A third standard in the accident statistics series is the American Standard Method of Compiling Industrial Injury Rates (Z16.1-1937).

These three standards were prepared by an ASA Sectional Committee on Standardization of Methods of Recording and Compiling Accident Statistics (Z16), working under the sponsorship of the National Safety Council, the National Council on Compensation Insurance, and the International Association of Industrial Accident Boards and Commissions.

The American Standard Method of Compiling Industrial Injury Rates (Z16.1-1937) is available from the American Standards Association at 20 cents; and the American Recommended Practice for Compiling Industrial Accident Causes (Z16.2-1941) is available at $1.00. This includes both Part I and Part II.

1942 there were a total of 61 cases in which the employee failed to report the injury at once. In 39 of these cases lost time might have been averted had the injuries been reported immediately. This is a significant idea, which can be acted upon through greater publicity and more intensified training of supervisors and employees to emphasize the absolute necessity of reporting all injuries at once, no matter how minor they may seem to be.

Abraham Lincoln stated the entire accident prevention case when he said, "It is the duty of every man to protect himself and those associated with him from accidents which may result in injury or death."

With this thought in mind, the American Standards Association has offered a Cause Code which gives safety directors a simple but effective method for investigating accidents and for training supervisors and employees, while at the same time furnishing intelligent data to the national and state agencies.

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INVESTIGATION OF TEMPORARY PARTIAL DISABILITY
HAWTHORNE WORKS (DISABILITY ASSIGNMENTS)
CALENDAR MONTH OF JANUARY, 1943

Name: John Doe **Date of Birth:** Aug. 7, 1916 (5) **Service:** June 9, 1941 (5)

Date of Injury: January 4, 1943 (2) – 4:25 p.m. – Day Shift (02) – Bldg. 39-3

Occupation: Cutter Grinder (7381) – Tool Repair Section, 2900-1

Days Disability: Calendar Days – 16. Working Days – 12

Nature of Injury: Cut (laceration) of right index finger (proximal joint, dorsal surface) (BJK)

SELECTED ACCIDENT FACTORS (Statistical Use)

Agency: No. 1. Brown & Sharpe Universal Grinder (No. 538)

Agency Part: Grinding wheel, universal grinder

Accident Type: Striking against object (01)

Unsafe Mechanical or Physical Condition: Hidden hazard, grinding wheel still revolving (19)
Excessive heat of piece part (18)

Unsafe Act: Touching hot liner pin bushing while grinding wheel was still revolving (61)

Unsafe Personal Factor: Poor judgment (14)

Details: Mr. Doe was operating a No. 1 Brown & Sharpe Universal Grinder (No. 538) equipped with an internal attachment for grinding holes in liner pin bushing for size. While the grinding wheel was still revolving he touched the bushing to determine if it was cool enough to check. When be found the bushing was much warmer than he expected be jerked his hand back striking it against the grinding wheel.

Responsibility: Employee – Poor judgment (51)

Remarks: Investigation revealed that the grinding wheel operated at approximately 12000 rpm thus requiring some time to stop revolving. It is felt the employee exercised poor judgment in this situation when he attempted to touch the liner pin bushing before the grinding wheel had stopped revolving. Therefore, we are charging the responsibility to the employee.

From January 5, until January 21, 1943, Mr. Doe was under a work restriction limiting the use of his right hand. While observing this restriction he was able to resume most of his regular work.

Corrective Measures: Mr. Doe realizes his error in failing to wait until the grinding wheel had stopped revolving before touching the hot liner pin bushing. However, this work was again reviewed thoroughly with him. (31)

NOTE: Numbers within parentheses refer to classifications in the Cause Code.

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INVESTIGATION OF TEMPORARY TOTAL DISABILITY
HAWTHORNE WORKS (LOST TIME)
CALENDAR MONTH OF JANUARY, 1943

Name: Joe Smith **Date of Birth:** Oct. 3, 1901 (8) **Service:** August 31, 1940 (6)

Date of Injury: January 13, 1943 (04) - 1:05 p.m. - Day Shift (02) - 47th Street

Occupation: Pipe Fitter (6822) – Maintenance and General Service Section, 2900-1

Days Disability: Not returned to date, February 12, 1943

Nature of Injury: Fracture (comminuted) right great toe (distal phalanx); fracture same toe (distal articulating surface proximal phalanx). (CSL)

SELECTED ACCIDENT FACTORS (Statistical Use)

Agency: Coupling (approx 12 lb)

Agency Part: None

Accident Type: Struck by falling object (02)

Unsafe Mechanical or Physical Condition: Unsafely attached material (20)

Unsafe Act: Using wrong equipment for job (other employee) (34)
Failure to wear safety shoes (84)

Unsafe Personal Factor: Disregard of instructions (other employee) (00)
Poor judgment (14)

Details: Mr. Smith and another employee were removing a centrifugal pump from a skid when a car coupling which had been tied to the pump with a piece of twine fell upon his toe.

Responsibility: Other employee – Unsafe practice in use of twine to attach coupling (65)

Other Supervision – Failure to seethat coupling was attached properly (07)

Employee – Failure to wear safety shoes (56)

Remarks: This coupling weighed approximately 12 pounds and fell a distance of about 2 to 2-½ ft. It had been attached to the pump at Hawthorne before being trucked to 47th Street. The twine which had been used was light and had been run through the coupling. Contact with the sharp threads had caused it to wear through en route and, although the severed twine was apparently still in place, there was nothing actually holding the coupling. When they straightened up with the pump, the coupling simply rolled off.

Mr. Smith was not wearing safety shoes. He has some but states that they hurt his feet. Had he been wearing them, the injury might have been averted.

We are dividing the responsibilty both to the other employee and his supervision responsible for the use of the twine and to Mr. Smith for failing to wear safety shoes.

The latter was given immediate treatment at the first aid station and then by our doctor at 47th Street. He was taken home later in the afternoon.

Corrective Measures: Wire will be used in the future when attaching parts for shipment. (30)

Instructions have also been issued to remove miscellaneous attached parts in the future before lifting. (31)

The employee has been instructed to wear his safety shoes at all times. (35)

China's Plans for Post-War Standardization

THE reconstruction of war-torn nations "will be a task unprecedented in the annals of mankind," but China will be faced with an even more burdensome problem than that of other countries, the Chinese Institute of Engineers in America points out in a Forum on Post-War Industrialization of China, just published. In addition to the rehabilitation work, China "must further seek to raise herself far above the industrially backward position she occupied before the outbreak of the war."

The engineers who are members of the Chinese Institute are now in the United States studying industry here and working on plans for the industrial development of China. They have just started publication of a technical journal, the first number of which features the Forum on Post-War Industrialization, with industrial standardization as one of the important subjects under discussion. The publication will introduce Chinese technical developments to American readers and bring American technical information to engineers in China.

Standardization an Important Problem

One of the problems of greatest interest in connection with the industrialization of China is the adoption of industrial standards, declares T. Y. Lu, author of the section on Industrial Standardization. Standards for the things China is going to manufacture or to buy must be defined not after the war but right now, he states. "The writer's bitter experiences in the past in supplying the spare parts for vehicles used both on rails and on highways in China make him realize how important and urgent the problem of standardization is", Mr. Lu explains.

"The term 'Standardization' is not new in China," Mr. Lu points out in his discussion of the program which the Chinese engineers are now working out. "The metric system has long been adopted as National Standards of weights and measures. But the majority of industrial executives have not yet fully realized the basic importance of standards in their own business. It was last year that a Chinese Industrial Standardization Association was organized as a result of the Eleventh Annual Conference of the Chinese Institute of Engineers held in China. Again due to the lack of realization of the urgency, the accomplishment of that Association is so far very much below expectancy.

"Industrial standards can not be blindly formulated over-night by a mere group of enthusiastic technologists. They should be worked out by an organization consisting of men representing Government, industry, and trained professionals. Standards of European continental countries as well as those of Great Britain and the United States should be assembled and used as references in formulating our own standards. When this information has been collected, the work of standardization can be carried out by first working on those standards which are most urgently needed. For instance, specifications for building materials, ratings for electrical equipment, and safety standards are the general categories requiring prompt attention.

"Because the work of adoption of Chinese industrial standards will be started almost on a clean slate, it seems not inappropriate for the members of this Institute in this country to formulate and propose tentative standards in the categories mentioned above. The results can be considered only as a draft to be based upon for further discussion by a body of experts representing all interests and working in constant contact with the facts at home. . . ."

Bureau of Ships (Radio Division) Approves War Standards on Radio

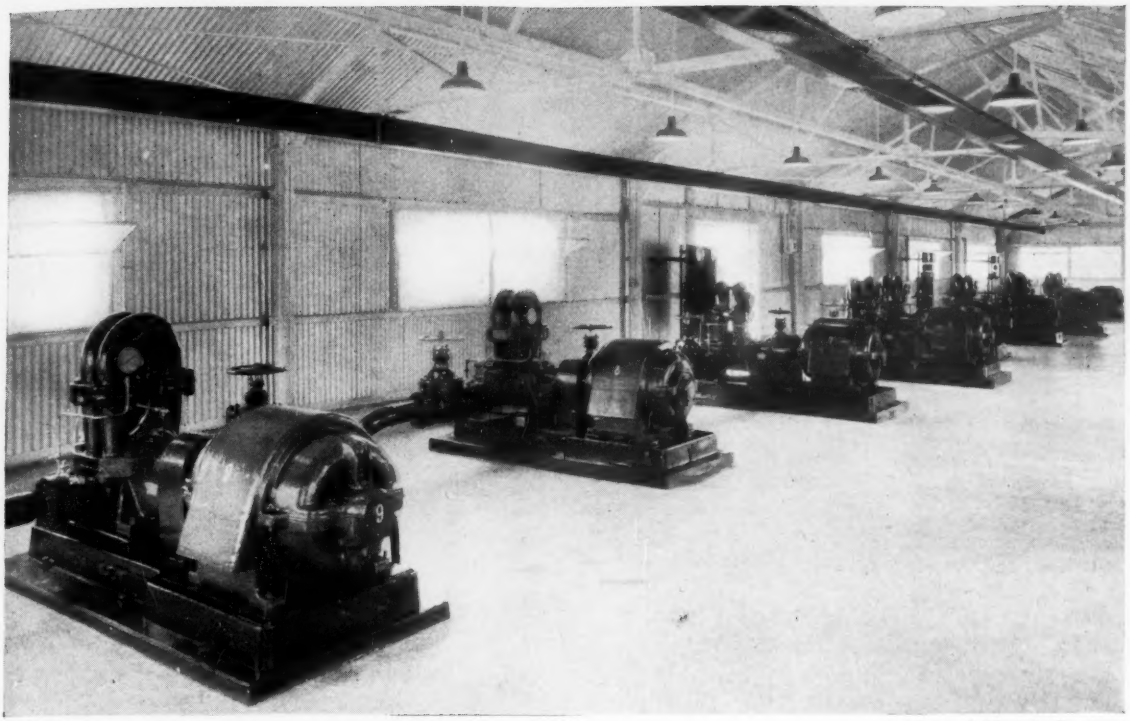
The Radio Division of the Bureau of Ships, U. S. Navy Department, has approved the following American War Standards for use in the procurement of radio equipment and material on the Electronic Precedence List:

Electrical Indicating Instruments (2½ and 3½ Inch Round, Flush-Mounting, Panel-Type)	C39.2-1943
Ceramic Radio Insulating Materials, Class L.	C75.1-1943
Ceramic Radio Dielectric Materials, Class H.	C75.4-1943

These standards were also approved previously by the Signal Corps Standards Agency of the U. S. Army for use by the Signal Corps.

The approval of the Radio Division of the Bureau of Ships was received by the American Standards Association too late to include announcements in the published standards, which have already been distributed. This announcement in INDUSTRIAL STANDARDIZATION will serve, therefore, as official notice to those who have received copies of the standards.

An arrangement is now being worked out whereby printed copies of the approval by both the Signal Corps Standards Agency and the Radio Division, Bureau of Ships may be included in future American War Standards for military radio.



General Electric Company

The American Standard for Rotating Electrical Machinery is used in building induction motors such as these 250 hp, 3600 rpm motors in an oil pipe-line pumping station.

Revised Standard Is Completed For Rotating Electrical Machinery

by E. B. Paxton[1]

Secretary, ASA Sectional Committee on Rotating Electrical Machinery (C50)

STANDARDS for Rotating Electrical Machinery have been generally accepted for so many years in ordinary commercial transactions and as a basis for manufacture and acceptance tests that their use has become routine. But one may well inquire whether the American Standard for Rotating Electrical Machinery (C50), which has served so well in ordinary times, is equally adaptable under present wartime conditions. It is a fact that no changes have been made specifically to meet wartime conditions in the present revision of the standard just completed and approved by the American Standards Association.

This fact indicates that, in the opinion of those responsible for the standard, the advantages of continuing an existing and active standard outweigh any possible economic gains which might be accomplished by a change in the requirements, with the attendant delay and disturbance of production. Further, the war emergency has changed the intensity rather than the character of the uses for electrical apparatus, so that emergency needs do not require changes in the basic standards.

[1] General Electric Company, Schenectady, N. Y.

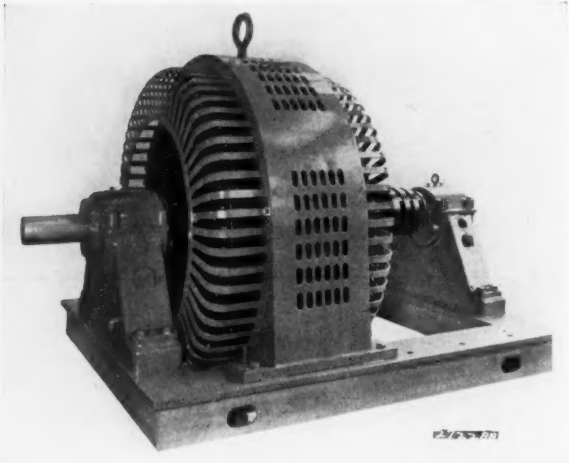
Standards normally grow out of practical experience, and are designed to leave full freedom for the trial and ultimate adoption of new inventions or design improvements. The fundamental nature of the requirements set by the standards, therefore, obviates any need for frequent changes. For example, the American Standard for Rotating Electrical Machinery does not establish values for efficiency but only classifies and specifies the losses to be included and outlines methods for determining them. Thus an improvement in design which raises the efficiency can be introduced with no change whatever in the standard.

Improvements Accepted

If an improvement in design or technique is made which is not provided for in the standard, users are quick to accept it on a voluntary basis, pending its inclusion in the standard. About the time the 1936 edition of the American Standard for Rotating Electrical Machinery (C50-1936) was issued, manufacturers of large induction motors developed and agreed to use methods of measuring the efficiency which included the stray load loss. This had not been included previously. Despite the fact that the 1936 edition of the C50 standard has been at variance with this practice and has not, until the present revision, required inclusion of the stray load loss, the improved practice has been followed generally.

As another example, when glass fiber insulation was introduced, it (with binder) was found to fall naturally in the Class B insulation group. The definition of Class B insulation was revised by the AIEE at the first opportunity to include specific mention of glass, but the original definition of Class B insulation was in fact broad enough to include it, and in any case it is safe to say that the lack of a definition did not retard the innovation.

Changes in design and practice will be made as changed conditions require, but these will be worked out first in the laboratories and at the designers' desks and in most cases will be used in practice well in advance of recognition in the standard.



Westinghouse Photo

High-speed synchronous motors are also covered in the American Standard.

Standards facilitate to an incalculable extent the manufacture, sale, and application of equipment. Economies in manufacture are effected by the elimination of special requirements, which should be avoided wherever possible. The purchase of apparatus by specifying it to be in accordance with recognized standards saves much effort which would otherwise be expended in preparation of detailed specifications and assures the purchaser of a uniform product closely comparable as to its principal characteristics regardless of the source of manufacture. Ultimately, this results in more efficient manufacture, consequently reduced prices, and in quicker deliveries. Although important in normal times, these results are of immense benefit during wartime.

The tendency of the standard has been toward conservatism; which in this case results in liberality of design and operating characteristics, to the end that an electrical machine will be ample, or more than ample, for the job at hand and will require the minimum of attention. Most standard electrical machines, although this is less true of rotating machines than, for example, transformers, have considerable latitude in their capacity for performance in service. Advantage can be taken of this inherent capability though usually at some sacrifice in length of life or reliability of the equipment, without change in the standard or in the design of the machine. Thus, increased output to meet an emergency may be obtained by careful selection and supervision.

What the Revisions Are

The latest revisions in the standard are not extensive. The principal ones are described briefly in the following:

Definitions have been eliminated, as they are included in the American Standard Definitions of Electrical Terms (C42-1941).

The four AIEE test codes pertaining to rotating electrical machinery have been made a part of the standards by reference.

Use of the resistance method for determining temperatures has been extended by making this an alternative method for shunt field windings of direct-current machines and the windings of induction motors.

A new method of rating for intermittent, periodic, or varying duty based on recent AIEE Publication No. 1A is recognized for trial use.

The 1936 edition required the friction and windage losses, in the case of a machine furnished with incomplete bearings, to be measured with temporary bearings of the size and type normal for the machine. This requirement did not work

out satisfactorily and was not followed in actual practice. Consequently, a revision has been made in the 1943 edition, omitting these losses when determining the efficiency, but providing that they be stated separately when requested by the purchaser.

Allowable variation in operating voltage five percent above or below rated voltage is now specified for frequency changers and synchronous condensers.

Normal Wk^2 values for low speed (450 rpm and lower) synchronous motors have been added as a basis for the specified minimum values of pull-in torque. The minimum values of starting, pull-in and pull-out torque previously assigned to compressor motors have been deleted and henceforth the values for standard motors generally will apply

New Short Circuit Requirement

The previous short-circuit requirement for a synchronous machine, the purpose of which is to insure adequate mechanical construction and bracing of windings, has been found to be impractical because no reference was made to the type of fault (three-phase, line to ground, or line to line) and because serious consequences due to heating in the rotor iron may be encountered if the short circuit is held for any appreciable length of time, particularly in the case of a line-to-line fault. The new rule shortens the time of application from 30 seconds to 10 seconds and limits the current value to that of a three-phase short circuit.

Exciter losses (*i.e.*, losses in the exciting generator, not excitation losses or field losses) are not normally included with the machine losses, and this practice has not been changed except in the case of synchronous condensers, where the exciter losses are included.

Balanced and residual component telephone interference factors for synchronous generators, in agreement with the long standing NELA Publication No. 239, have been added. The subject is undergoing study, and revision in the future may be expected.

It will be noticed that a number of paragraphs pertaining to efficiency of induction machines have been deleted. The purpose of this, however, is to avoid conflict with the AIEE Test Code for Polyphase Induction Machines, which contains the detailed procedure for determining the true efficiency, taking into account stray load losses which were previously neglected.

Appendices IV, Brushes, and V, Insulation Resistance, of the 1936 edition have been deleted. The former is included in the scope of another ASA project and the latter is treated in the AIEE Test Codes.

After six years in use, the American Standard for Rotating Electrical Machinery has now been revised to bring it up-to-date with changes in industrial practice which have taken place since the standard was originally approved in 1936. The changes incorporated in the new edition recognize for the most part practices already in effect, as well as those which have been newly developed.

The ASA Electrical Standards Committee which sponsored the work of ASA sectional committee C50 acknowledges contributions made to the work by the American Institute of Electrical Engineers, the National Electrical Manufacturers Association, and others. Much of the original early standardization work of the American Institute of Electrical Engineers remains basically unchanged in this publication, the committee announces. The test codes recently developed by the American Institute of Electrical Engineers are now made part of this standard.

Suggestions for revisions of the standard are invited and should be addressed to the American Standards Association.

Copies of the American Standard for Rotating Electrical Machinery (C50-1943) are available from the American Standards Association at $1.25. ASA Members are entitled to 20 per cent discount on all approved American Standards.

A-2 Priorities for Standardized Textiles

In order to spur the simplification of various textile products, particularly those using rayon or other scarce yarns, so that the civilian supply may be expanded, the War Production Board has granted A-2 priorities on essential materials for manufacturers adhering to standardized products.

This new policy was first put into effect in connection with Conservation Order M-298 which regulates the sizes and colors of civilian blankets. In this order it was pointed out that no manufacturer may use materials obtained by the preference rating, unless the blanket produced conforms to the sizes, weights and specifications outlined.

ASA Approves Fourth Civilian Radio Standard

Another standard, the fourth of a series of war standards to provide replacement parts for civilian radio, has recently been completed by the American Standards Association, with the cooperation of all branches of the Radio industry, the War Production Board, and the Office of Price Administration. This standard, as well as two of the other three, are referred to in WPB Limitation Order L-293, Simplification of Radio Replacement Parts. This order limits production of dry electrolytic capacitors, fixed paper-dielectric capacitors, and power and audio transformers used as radio replacement parts to those which meet the requirements of the American War Standards.

The new standard, Power and Audio Transformers and Reactors, Home Receiver Replacement Type (C16.9-1943) covers the performance and quality requirements for a simplified list of 14 such units which, it is estimated, will be sufficient to service about 90 per cent of the radio sets now in operation. Use of the new standard will also assure that such critical materials as copper and transformer steel, allocated to the production of radio replacement parts, will be stretched as far as possible with a minimum amount of material being used in each unit. The simplified list of units will also mean fewer production lines and smaller dealer inventories.

All items manufactured in accordance with the specifications outlined in the American War Standards for civilian radio replacement parts bear the special symbol consisting of a V with the Morse Code "V"—three dots and a dash—enclosed in a circle.

Work on this standard was undertaken at the request of the Office of Price Administration after consultation with the Radio and Radar Division of the War Production Board.

Dr. O. H. Caldwell is chairman of the committee which developed this standard, with John M. Borst, Chief Engineer of John F. Rider Publisher, Inc, as vice-chairman.

Other committee members include George D. Barbey, National Electronic Distributors Association; M. M. Brandon, Underwriters' Laboratories; Gerrard Mountjoy, RCA License Laboratory; M. J. Schinke, Chairman, Radio Manufacturers Association's Service Committee; (P. R. Butler, General Electric Company, *Alternate*); George F. DuVal, Past President, Radio Servicemen of America (A. E. Rhine, *Alternate*); S. L. Chertok, ASA, Secretary.

Government liaison men on the committee include Frank H. McIntosh, Chief of the Domestic and Foreign Radio Section of the WPB (Samuel Weisbroth, *Alternate*); Karl S. Geiges, Simplification Branch, WPB; and Earl A. Graham, Chief, Consumer Durable Goods Section, Standards Division, OPA.

Four American War Standards for replacement parts for civilian radio have now been completed and are available from the American Standards Association. These are:

Fixed Paper-Dielectric Capacitors (Home Receiver Replacement Type) C16.6-1943 20¢

Dry Electrolytic Capacitors (Home Receiver Replacement Type) C16.7-1943 20¢

Simplified List of Home Radio Replacement Parts (Paper and Electrolytic Capacitors, Volume Controls, Power and Audio Transformers and Reactors) C16.8-1943 20¢

Power and Audio Transformers and Reactors (Home Receiver Replacement Type) C16.9-1943 25¢

WPB Limitation Order L-293 refers to three of these American War Standards:—C16.6-1943, C16.7-1943, and C16.9-1943.

American Standards on Quality Control Adopted as Canadian Standards

The Canadian Engineering Standards Association has adopted the three American War Standards on Quality Control as Canadian Standards. The three standards are: Guide for Quality Control (Z1.1-1941); Control Chart Method of Analyzing Data (Z1.2-1941); and Control Chart Method of Controlling Quality During Production (Z1.3-1942). The Canadian Engineering Standards Association is using the original American editions of the standards and placing stickers on the documents indicating that they have been approved as Canadian Standards.

As announced previously the Standards Association of Australia has also adopted these American War Standards and published them in a single pamphlet as Australian Standards.

New Standard to Test Instruments For Resistance to Shock

Tests Designed to Simulate Battlefield Conditions

THE delicate electrical indicating instruments produced in war plants throughout the country come off the assembly line designed to give accurate, trustworthy results. However, they must also continue to give the same results under the rough, unpredictable conditions of the actual battle field. In order to determine the suitability of such instruments for use in mobile and field communications equipment, and other apparatus subject to severe shock, it was found necessary to design and construct a mechanism whereby instruments might be subjected to impact tests in the laboratory.

Since such tests for resistance to shock were being conducted by various and different means throughout the country, the necessity for a standard machine became obvious. Such a War Standard has just been developed by the American Standards Association through the coordinated efforts of representatives of industry and the Armed Services, at the request of the War Production Board.

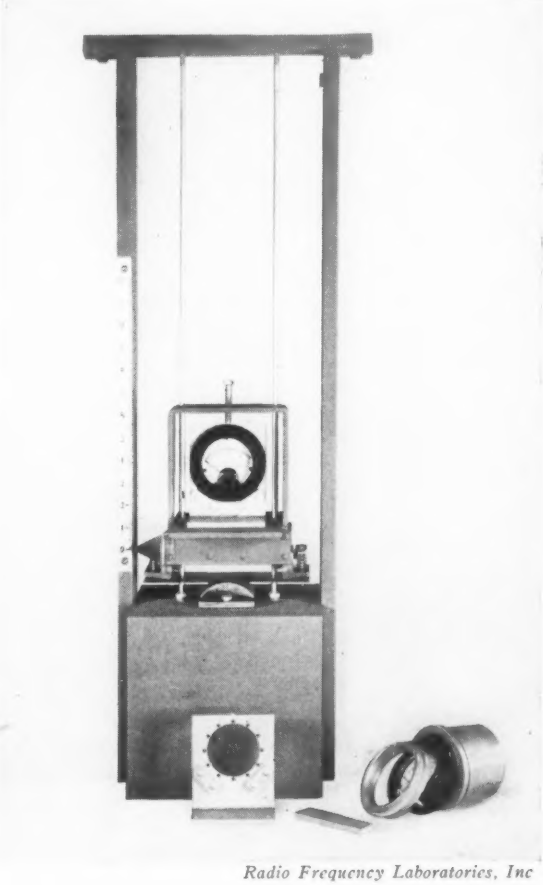
Resembles a Guillotine

The American War Standard, Shock Testing Mechanism for Electrical Indicating Instruments (2½- and 3½-inch, Round, Flush-Mounting, Panel-Type), C39.3-1943, describes a mechanism which is an adaptation of a design originally made by the National Bureau of Standards. Much work also had been done on this machine by the Weston Electrical Instrument Corporation. Essentially the impact testing mechanism resembles a guillotine, as can be seen from the illustration. The main structure consists of a heavy metal bed to which channel iron uprights are securely bolted. The tops of the uprights are secured together by means of a tie plate which also supports rods to guide the movable instrument carriage. The other ends of the guide rods are screwed into the bed. The movable carriage carries on its underside a stiff calibrated spring resiliently mounted but at the same time having helical compression springs sufficiently strong to hold the calibrated spring in contact with the effective cylindrical bearings.

The design is the product of very careful study of the problems involved, and it is suggested that it be followed very closely in order to assure satisfactory and consistent results. The apparatus may also be adapted to the shock testing of other equipment components weighing not more than about four pounds.

Members of Committee

The ASA drafting committee which developed this new standard is composed of the following members: J. W. McNair, American Standards Association, (Chairman); J. H. Miller, Weston Electrical Instrument Corporation; J. M. Whittenton, General Electric Company; D. A. Young, Westinghouse Electric and Manufacturing Company; A. M. Okun, Aircraft Radio Laboratory;



Radio Frequency Laboratories, Inc

The new standard mechanism for shock-testing panel-type electrical indicating instruments.

F. K. Priebe, Fort Monmouth Signal Laboratory; B. R. Boymel and E. F. Seaman, U. S. Navy Bureau of Ships; S. L. Chertok, American Standards Association, (Secretary).

Valuable technical assistance was given the drafting group by Dr. L. B. Tuckerman of the National Bureau of Standards, A. T. Williams of the Weston Electrical Instrument Corporation and R. B. Corbin of Radio Frequency Laboratories, Inc.

Copies of the new American War Standard, Shock Testing Mechanism for Electrical Indicating Instruments (2½- and 3½-inch, Round, Flush-Mounting, Panel-Type), C39.3-1943, are available from the American Standards Association at 25 cents.

Advertising Group Joins ASA

THE Committee on Consumer Relations in Advertising recently affiliated with the American Standards Association as an Associate Member, and thus becomes the first advertising group among the 77 national organizations which are members of the ASA. The Committee is a coordinating agency, and represents advertising agencies and all the different kinds of media. It was recently reorganized in order to extend and strengthen its work.

In carrying out its new program the Committee is making a special effort to inform consumers through the Consumers News Digest (published twice a month) of trends and events which affect the day-to-day activities of consumers. It is also publishing a catalog of educational materials giving special attention to those materials involving war needs. One phase of its work is to counsel with advertisers as to the kind and type of informative advertising needed in wartime. The Committee is also engaged in an extensive study of advertising and distribution in a post-war economy.

Through its membership in the American Standards Association the Committee keeps in touch with national standardization activities in the consumer field as well as in industry. The increasing importance of this phase of the ASA's work is indicated by the recent addition to the staff of a Commodities Engineer who is helping to develop the standards in the consumer field. Many of these standards are being carried forward at the request of the Office of Price Administration under the contract between the American Standards Association and the Office of Emergency Management.

The Committee on Consumer Relations in Advertising, which works closely with the American Association of Advertising Agencies, is directed by Dr. Kenneth Dameron. Its address is 420 Lexington Avenue, New York 17, N. Y.

Members of the Executive Board are:

Representing magazines:
Roy Larsen, Time, Inc
Frank Braucher, Periodical Publishers Assn
Donald Hobart, Curtis Publishing Company

Representing newspapers:
Edwin S. Friendly, the New York Sun
John Meilink, Cleveland Press
Buell Hudson, Woonsocket Call

Representing radio:
Neville Miller, National Assn of Broadcasters

Representing outdoor:
Kerwin Fulton, Outdoor Advertising Inc

Representing advertising agencies:
Willia Reydel, Newell-Emmett Company
Chester J. LaRoche, Young and Rubicam, Inc
John Benson, American Assn of Advertising Agencies

CESA Organizes Project on Switches

A newly organized committee on electric range switches recently held its first meeting in Toronto, the Canadian Engineering Standards Association announces. In view of the serious shortages which exist today in replacements, the importance of adopting switch equipment that would permit free interchange on all new models of electric ranges to be placed on the market was emphasized.

It was noted that in all probability standards developed by the new committee would be primarily for post-war application, due to present restrictions on production.

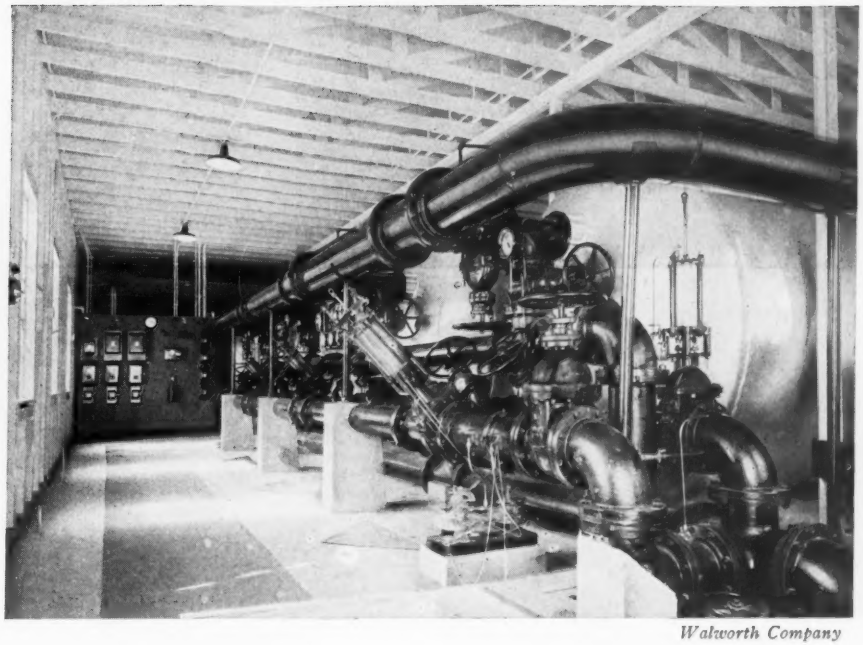
ASA Nominating Committee

The Board of Directors of the American Standards Association has appointed a Nominating Committee which will present nominations for the offices of President and Vice President for the year 1944. The three members are:

C. L. Collens, president, Reliance Electric & Engineering Company, Cleveland, Ohio—representing the National Electrical Manufacturers Association.

H. S. Osborne, chief engineer, American Telephone & Telegraph Company, New York, N. Y.—chairman, ASA Standards Council.

E. A. Prentis, Spencer, White & Prentis, Inc, New York, N. Y.—past-president of the American Standards Association.



Walworth Company

Pressure ratings for the type of pipe flanges and fittings used in this California water works are revised by the new American War Standard.

War Standard Revises Ratings Of Pipe Flanges and Fittings

by N. O. Smith-Petersen[1]

Chairman, ASA War Committee on Rating of Pipe Flanges and Fittings

IN 1928 a standard for cast-iron flanges and fittings entitled "Cast Iron Pipe Flanges and Flanged Fittings" (B16a-1928) was issued by the American Engineering Standards Committee (now the American Standards Association). This standard gave a pressure rating of 125 psi (gage) for all pipe sizes. The cast-iron material to be used was specified according to tensile strength and in three grades: 20,000 psi, 21,000 psi, and 24,000 psi. The 20,000 psi cast-iron material was specified for pipe sizes up to and including 3½ in.; the 21,000 psi from 4 in. to 42 in., inclusive; and the 24,000 psi above 42 in.

In 1939 a revision of this standard was approved, changing the title to "Cast Iron Pipe Flanges and Flanged Fittings, Class 125," and also making changes in pressure ratings, marking, material specification, wall thickness (from 1 in. to 3 in., inclusive), and in introductory notes concerning wall thickness tolerance, spot facing, length of bolt, and drain tappings.

The changes in pressure rating and material consisted in a betterment in material for sizes 1 in. to 3 in., inclusive, and above 12 in., together with a reduction in steam pressure ratings for sizes above 5 in.

This revision was not responded to by the industry as well as was expected, mostly because the reduction in pressure ratings, particularly for sizes 6 in. to 12 in., inclusive, did not correspond closely enough to established usage. No objection, however, appears to have been taken to the betterment in material specified. This situation required clearing up and became more urgently in need of adjustment when the steel shortage due to war demands made necessary the use of cast iron to its full extent.

The War Committee on Rating of Pipe Flanges and Fittings was therefore requested by the War Production Board, through the American Standards Association, to revise pressure ratings for the standard. Unfortunately calculations of strength of these fittings and flanges are not possible for lack of authentic formulas, the difficulty

[1] Walworth Company, New York.

being chiefly that of ascertaining the loading effect upon flanges with elastic gaskets out to the bolt holes. Consequently the War Committee could only be guided in its pressure revision by past practice in the use of these flanges and fittings. This practice, authorized by the 1928 standard, permitted a pressure rating of 125 psi (gage) for sizes 4 in. to 42 in., inclusive, for 21,000 psi cast iron. This full range in sizes from 4 in. to 42 in., inclusive, for this pressure rating is not, however, in accordance with the industry's present-day practice. The range was therefore reduced and the pressure rating of 125 psi (gage) permitted up to and including 12 in. for 21,000 psi cast iron, and 100 psi (gage) for 14 in. to 24 in. for 31,000 psi cast-iron material. This pressure rating is somewhat higher than the 1939 rating for the sizes mentioned but is believed to correspond more closely to the existing usage of these flanges and fittings.

This standard was approved by the American Standards Association as an American War Standard on April 15, 1943.

The American War Standard Pressure Ratings for Cast-Iron Pipe Flanges and Flanged Fittings, Class 125 (B16a1-1943) is available from the American Standards Association at 20 cents. It is a revision of paragraph 1, "Pressure Rating," and paragraph 3, "Marking" of American Standard B16a-1939.

OPA Grants Special Ration Stamps for Safety Shoes

RECOGNIZING that many workers need safety shoes, and that the demand is increasing as new workers go into war plants, the Office of Price Administration has set up a quick and convenient method of making this footwear available to workers who have already used ration stamp No. 17, the OPA announces. Under the new plan, employers can issue ration stamps for safety shoes at the plant, unless the plant is served by a Plant Area Board, in which case that Board handles issuance of the stamps.

How the Plan Works

The plan operates very simply. An employee who does not have a ration stamp of his own available (it is to be noted that it is not necessary for the individual to use the stamps of other members of his family) applies to the company representative for a special shoe stamp. The representative, who may be either the safety engineer or the personnel manager, verifies the application, and upon approval issues the requested stamp.

Since safety shoes are made of strategic materials, the OPA District Office will review individual worker's applications against which employers have issued ration stamps.

To get an initial two months' supply of stamps, an employer may apply in writing to the OPA District Office that serves his area, the Office of Price Administration suggests.

Because both the War Production Board and the Office of Price Administration realized the importance of safety shoes in keeping the worker safe and on the job, they requested the American Standards Association to develop specifications for this type of footwear. To date six American War Standards on safety shoes have been published (five for men, and one for women), and three additional standards on women's shoes are nearly completed.

Thom McAn Shoes

OPA's plan encourages workers to buy safety shoes.

WPB Chief Outlines New Policy on Standards

THE policy of the War Production Board on the use of standards or simplification schedules in WPB orders has been outlined in a memorandum just issued by Donald M. Nelson. The memorandum was addressed to bureau directors, division directors, division counsel, and executive consultants of WPB. It reads as follows:

"An intelligent application of the principles of simplification and standardization can be of great value to the war effort. For this reason we should push such programs wherever substantial benefits to the war effort will result.

"The guiding principle of the War Production Board and our statutory authority are to allocate scarce materials and facilities 'in the public interest and to promote the national defense.' In the fulfillment of this responsibility we must center our attention on those products where worthwhile savings can be made.

"The following general rules are laid down for the guidance of the Industry divisions in preparing orders containing simplification and standardization provisions and of the Clearance Committee in studying such orders before issuance. All proposed orders must be considered and all existing orders should be reviewed in the light of these general rules."

The general rules laid down by Mr. Nelson are as follows:

1. It is the firm policy of the WPB to execute with dispatch those simplification and standardization projects which will substantially aid in the war effort. Conversely, unless it is clear that a simplification or standardization project will be of definite benefit, it should not be undertaken.

2. In general worthwhile orders are those which will yield a substantial saving of a critical material, or of that type of manpower or of production or transportation facilities of which there is a present or impending shortage, or which will result in needed interchangeability of parts.

3. Orders should not be issued for the purpose of simplifying or standardizing the less essential consumer products or containers therefor when the desired savings in such products or containers can be attained through reduction or elimination of the materials used or through diversion of the facilities employed.

4. Before simplifying or standardizing an important consumer product made with materials, facilities, and manpower which are also used to any appreciable extent in the making of less essential products, consideration should be given to the reduction or elimination of such materials, facilities, or manpower used in producing the less essential articles.

5. Sound simplification should not make obsolete needed production equipment such as machinery, dies, tools, etc, nor should it reduce the volume of essential production without proof of compensating advantage.

6. Detailed specification shall be used only to the extent necessary to accomplish the desired results. In this way manufacturers will be permitted the maximum latitude and unnecessary restrictions on industry and on products will be avoided. Simplification or standardization that requires the production of identical articles by all manufacturers should be avoided except where absolutely necessary for the interchangeability of parts.

7. Minimum standards (including quality specifications) or minimum performance tests should be included only where necessary to assure the safety or serviceability of a product. These cases will be largely confined to the consumer field since the military procurement agencies and industrial purchasers are in a position to protect themselves through specifications which will assure that the products they buy are adequate for the intended purpose.

8. Minimum standards must represent only actual minimum requirements from a performance point of view in the light of war time conditions. The National Bureau of Standards should be consulted in all cases where minimum standards are being included in orders.

9. Wherever a trade association or one or more members of an industry are consulted in the development of a simplification or standardization program, before an order is issued the proposed program must be submitted either to all known members of the industry or to a representative group for comments or consultation. An industry advisory committee, where it exists, is the appropriate medium for such submission to a representative group of industry, but submission to all known members of the industry with an opportunity for comments is desirable wherever practicable. Departure from either of these two procedures should be had only after approval of the General Counsel or an Assistant General Counsel.

10. The SEC Form or memorandum accompanying orders containing simplification or standardization provisions must include the following in addition to information required on other types of orders:

(*a*) The extent to which and the manner in which the proposed order has been submitted to industry for comments.

(*b*) The reactions of all sections of industry to the proposed program, and the manner in which objections and suggestions of substance have been treated.

(*c*) The reaction of the National Bureau of Standards in those cases where minimum standards are being included.

Standards for City Gas Piping

New provisions, which are expected to serve as a basis for modernizing municipal and insurance companies' requirements in the city gas piping field, have been added to the NFPA Standards for the Installation, Maintenance, and Use of Piping and Fittings for City Gas. It is expected that the revised standard, which brings up to date previous editions, will be submitted to the American Standards Association for approval as a revision of the earlier American Standard Z27-1933.

The revised standard was adopted by the National Fire Protection Association as an NFPA standard at its annual meeting in May.

New ASA Company Members

In the past month eighteen organizations have become Company Members of the American Standards Association. These are:

Barnes Drill Company, Rockford, Illinois
Bodine Corporation, Bridgeport, Connecticut
Erie Foundry Company, Erie, Pennsylvania
Hall Planetary Company, Philadelphia, Pennsylvania
Hannifin Drill Company, Chicago, Illinois
Hardinge Brothers, Inc., Elmira, New York
International Diesel Electric Company, Inc., Long Island City, New York
Lapointe Machine Tool Company, Huddson, Massachusetts
Lehmann Machine Company, St. Louis, Missouri
Lipe-Rollway Corporation, Syracuse, New York
National Brass Company, Grand Rapids, Michigan
Oilgear Company, Milwaukee, Wisconsin
Potter & Johnston Machine Company, Pawtucket, Rhode Island
Smith Tool & Engineering Company, Bucyrus, Ohio
Sun Manufacturing Company, Chicago, Illinois
Thompson Grinder Company, Springfield, Ohio
Van Cleef Brothers, Chicago, Illinois
Wolverine Bolt Company, Detroit, Michigan

Fire-Resistance of Building Materials

A classification of building construction from the standpoint of fire safety is presented in the report, *Fire-Resistance Classifications of Building Materials* (BMS92), recently published by the National Bureau of Standards.

Four types were found sufficient to cover the entire range of building construction. Within each type are several classes which are defined by the fire resistance required for their structural members. In Chapter I the fire-resistance classification is given, as well as the method of application with reference to the fire severity obtaining for specified structural and occupancy conditions. Chapter II discusses the types of restrictions and limitations generally incorporated in building codes, and Chapter III gives the results of surveys of combustible contents of buildings housing typical occupancies as a basis for estimation of fire severity. The last chapter gives the available fire-resistance ratings of building constructions and fire-resistance classifications of roofing materials.

This publication is one of several documents being used as source material by the American Standards Sectional Committee on Fire Protection and Fire Resistance (A51).

The report is available from the Superintendent of Documents, Washington, D. C., for 25 cents.

Canadian Association Studies American Standards

Cooperation between the American Standards Association and the Canadian Engineering Standards Association has reached a new high during the past year. Recently, the American Standards Association, at the invitation of CESA, nominated a liaison representative on the committees working on Part I and Part II of the Canadian Electrical Code. Victor H. Tousley has been named as corresponding member of the ASA Electrical Standards Committee on the Canadian Part I Committee, and A. B. Smith as corresponding member of the Canadian Part II committee.

The Canadian Engineering Standards Association has recently considered the adoption of several American Standards. Among these have been the three American War Standards on Quality Control (which have been adopted as Canadian Standards), the American Standard Letter Symbols for Electrical Quantities, the American Standard Abbreviations for Scientific and Engineering Terms (used as the basis for a Canadian Standard), and the American War Standard, Photographic Exposure Computer.

Canadian and American Standards Agree on Abbreviations

In order to fill a long-felt need among Canadian engineers, the Canadian Engineering Standards Association has just issued standard abbreviations for scientific and engineering terms. The Canadian abbreviations are in substantial agreement with the American Standard on the same subject (Z10.1-1941).

The CESA Committee which was appointed in 1941 to review the American Standard Abbreviations for Scientific and Engineering Terms recommended several changes and additions to the list of abbreviations. However, in the interests of international uniformity, it was decided to hold these suggestions in abeyance until they could be incorporated into a revision of the American Standard as well.

The CESA standard, Abbreviations for Scientific and Engineering Terms (Z85-1943), can be obtained from the American Standards Association for 50 cents. The American Standard Abbreviations for Scientific and Engineering Terms (Z10.1-1941) is available from the ASA at 35 cents.

ASA Names Chandross As New Commodities Engineer

THE American Standards Association has appointed Morris L. Chandross to the newly created post of Commodities Engineer. His appointment comes at a time when the increasing importance of commodity standards is daily reflected in government quality definitions in price and production orders.

Mr. Chandross comes to the ASA from the Standards Division of the Office of Price Administration where, in the capacity of Senior Commodity Standards Specialist, he assisted in the development of standards and quality definitions for various commodities in the textile, leather, and apparel fields. Previously Mr. Chandross had been associated with the Bureau of Standards of R. H. Macy and Company, and the Hearn Department Stores; and was Director of the Abraham and Straus Testing Laboratory and Bureau of Standards before being appointed to the OPA. His department store experience entailed testing and inspection, and the development of standards and specifications for many and varied commodities, primarily in the textile and allied fields, but including durable goods, foods, sundries and general over-the-counter commodities and services.

ASA activity is not new to Mr. Chandross. In former years he has served as alternate member for the National Retail Dry Goods Association on the ASA Advisory Committee on Ultimate Consumer Goods, on several other sectional committees, and more recently cooperated in a liaison capacity as representative of the OPA in the work of developing standards for safety shoes.

Angela Calomiris

Morris L. Chandross

Mr. Chandross is a graduate of Brooklyn College. He is a member of the American Society for Testing Materials, of the well-known ASTM Committee D-13, and of the American Association of Textile Chemists and Colorists.

Argentina Asks Comments On Eight Draft Standards

Eight draft standards which are now being considered by the Argentine national standards association, the Instituto Argentino de Racionalizacion de Materiales (IRAM), for approval as Argentine standards, have been sent by IRAM to the American Standards Association with a request that they be circulated to experts in each field. These eight draft standards are in addition to the draft on Conversion of Units to the Giorgi MKS System which was announced in INDUSTRIAL STANDARDIZATION, May, 1943.

The Argentine association has asked that the American Standards Association forward suggestions of the United States experts to IRAM in order that the association may have the benefit of American industrial practice.

The draft standards cover:

Cold Drawn Seamless Brass Pipe
Seamless Brass Pipe for Condensers
Malleable Cast Iron
Methods of Cleaning Metallic Surfaces for Painting
Perilla Oil
Tung Oil
Technical Drawings—Graphs
Technical Drawings—Indication of Finished Surfaces

Argentine Standards in English Now Available from ASA

English translations of eleven Argentine standards which have been drawn up by the Instituto Argentino de Racionalizacion de Materiales (IRAM), and approved by the Argentine government for use by its various departments, are now available for reference in the Library of the American Standards Association. Photostat copies may be ordered from the ASA at the prices indicated in the list below:

IRAM 2-N.P.	Most Common Units and Symbols	$.80
IRAM 101-N.P.	General Conditions for Delivery and Mechanical Tests of Metallic Materials	$ .80
IRAM 111-N.P.	Test of Zinc Coating	.80
IRAM 501-N.P.	Definition and Designation of Iron and Steel Products	.80
IRAM 504-N.P.	Steel Plates for the Construction of Steam Boilers	2.00
IRAM 1001-N.P.	Raw Linseed Oil	1.60
IRAM 1002-N.P.	Boiled Linseed Oil	1.60
IRAM 1005-N.P.	Titanium Dioxide	1.20
IRAM 1008-N.P.	Barytes, Natural Barium Sulphate	.80
IRAM 2002-N.P.	Copper for Electrical Conductors	.80
IRAM 2013-N.P.	Standard Current Ratings	.40

Committee Reports Progress On Women's Work Clothes

A HARD-WORKING committee, meeting regularly during the past few months, is making good progress in its efforts to develop standards for women's work and safety garments. This project, undertaken at the request of the Office of Price Administration and the War Production Board, is aimed at relating quality to price by appropriate standards; and at establishing specifications for the construction of essential functional garments for women in industry. In addition to those details of construction which make for sturdy practical garments, the committee is concerned with size specifications to provide clothes that will fit with the degree of comfort necessary in industrial operations, and clothes which in themselves present no operational hazards.

Five Subcommittees at Work

In order to cope with all of the problems in necessary detail the full committee has authorized the appointment of five subcommittees to deal with the respective phases of the project. These subcommittees are:

Materials
Garment Construction
Essential Safety Features
Dimensions
Drafting Specifications

To date there have been 13 subcommittee meetings and two meetings of the full committee. The subcommittees have studied and analyzed fabrics, construction features, and safety requirements; have held several informal style shows; and have consulted and conferred with manufacturers, distributors, safety engineers, and government representatives.

The cooperation that the committee has received has been exemplary, those concerned report. Many manufacturers and industrial plants have submitted their ideas concretely in the form of samples of garments which have been in actual use and have tentatively proven themselves in their initial use in industry. They have also made available to the committee much significant data which it is expected will help to speed this work to a practical, objective, and successful conclusion.

Klean-Vu Products Company

Standards will provide construction requirements for women's work clothes.

Standards Issued by Associations and Government

(See "ASA Standards Activities", page 202 for new American Standards and progress on ASA projects)

For the information of ASA Members, the American Standards Association gives here a list of the standards received during the past month by the ASA Library for its classified files. With the increasing amount of material being received it has been decided to eliminate from the monthly list a few of those standards which may not be so important to ASA Members, such as Federal Specifications for foods. The list below, therefore, includes only those standards which the American Standards Association believes will be of greatest interest to Members in connection with their war production.

The standards listed may be consulted by ASA Members at the ASA Library, or copies may be obtained from the organization issuing the standard. Addresses of these organizations are given for your convenience.

Associations and Technical Societies

American Iron and Steel Institute (350 Fifth Avenue, New York, N. Y.)

Contributions to the Metallurgy of Steel—No. 10
Mechanical Properties NE 9400, 9500 and 9600 Series March, 1943
National Emergency Specifications
Simplification of Structural Steel Shapes April 1, 1943 25¢
Steel Products Manual
Alloy Steels, Section 10 February, 1943 25¢
Carbon Steel Plates, Section 6 March, 1943 25¢
Hot Rolled Rounds and Round Cornered Squares for Forged Shell, Section 3 May, 1943 25¢

American Society for Testing Materials (260 South Broad Street, Philadelphia, Pa.)

Emergency Alternate Specifications

Electric-Fusion-Welded Steel Pipe (Sizes 8 In. to but Not Including 30 In.) EA-A139a (American Standard B36.9-1942) April 8, 1943
Alloy-Steel Castings for Structural Purposes EA-A148a (American Standard G52.1-1943) April 27, 1943
Carbon-Steel Forgings for Locomotives and Cars EA-A236a May 8, 1943
Aluminum-Base Alloy Die Castings EA-B85a April 15, 1943
Rubber Sheath Compound for Electrical Insulated Cords and Cables EA-D532a April 15, 1943

Emergency Specifications

Structural Insulating Board (Thermal Insulation) ES-19 August 24, 1942
Malleable Iron Flanges, Pipe Fittings, and Valve Parts ES-20 October 6, 1943
Certain Carbon-Steel and Alloy-Steel Heavy Forgings ES-21 through ES-27 March, 1943 $1.00
Chloroprene Sheath Compound for Electrical Insulated Cords and Cables ES-28 April 15, 1943

ASTM Specifications—(Continued)

Chloroprene Sheath Compound for Electrical Insulated Cords and Cables where Extreme Abrasion Resistance Is Not Required ES-30 April 15, 1943

Association of American Railroads (Operations and Maintenance Department, Operating-Transportation Division, Telegraph and Telephone Section, 30 Vesey Street, New York, N. Y.)

Emergency Specifications

Tin-Antimony Wiping and Wire Solder for Lead Cable Work 1-A-38 EA-1 May, 1943
Twisted Pair Synthetic Insulated Inside Wire 2-G-85 ES May, 1943
No. 20 and No. 22 AWG Twisted Pair Synthetic Insulated Braid Covered Inside Wire 2-G-86 ES May, 1943
Suggestions to Effect Economies and Savings in Telegraphing 6-14EA May, 1943

Grinding Wheel Manufacturers Association (27 Elm Street, Worcester, Mass.)

Mounted Wheels and Points (Principles of Safe and Efficient Operation with Tables of Critical Speeds) 1943
Segments Used in Chucks 1939
Wheel Specifications for Grinding Machines April, 1942

National Fire Protection Association (60 Batterymarch Street, Boston, Mass.)

Industrial Fire Brigades Training Manual 1943 $1.50

Underwriters' Laboratories, Inc. (161 Sixth Avenue, New York, N. Y.)

Fire Exposure Tests of Fire Windows Bulletin of Research No. 28 March, 1943
Standard for Fuse-Holders 3rd ed May, 1943

U. S. Government

(Wherever a price is indicated, that publication may be secured from the Superintendent of Documents, Government Printing Office, Washington, D. C. Otherwise copies of the document may be obtained from the governmental agency concerned.)

National Bureau of Standards (Washington, D. C.)

Electric Batteries and Standard Cells Letter Circular LC-720 (supersedes LC-656)
Maintenance of Elevator Hoisting Machines and Brakes Circular C444 March 15, 1943 5¢

National Bureau of Standards—(Continued)

Maintenance of Elevator Hoistway and Car Enclosures and Equipment Circular C443 March 8, 1943 5¢

Commercial Standards

Commercial Electric-Refrigeration Condensing Units CS(E)107-43 May 15, 1943 10¢

Methods of Analysis and of Reporting Fiber Composition of Textile Products 2nd ed February 20, 1943 CS65-43 10¢

Simplified Practice Recommendations

In Print

Range Boilers and Expansion Tanks R8-42 December 19, 1942 5¢

Wire Rope R198-43 February 15, 1943 10¢

Federal Specifications Executive Committee (U. S. Treasury Department, Washington, D. C.)

Federal Specifications

(Copies available from Superintendent of Documents, Government Printing Office, Washington, D. C.)

The date after the title of the specification indicates when it becomes effective.

Acid; oxalic, technical (amendment 1) O-A-91 June 15, 1943

Aluminum-alloy (AL-24) (Aluminum-Copper-Magnesium [1.50%]-Manganese); bars, rods, shapes, and wire (superseding QQ-A-354) QQ-A-354a June 1, 1943

Aluminum Alloy (AL-52) (Aluminum-Magnesium-Chromium); bars, rods, shapes, and wire (new) QQ-A-315 May 15, 1943

Anvils; blacksmiths' (new) GGG-A-576 May 15, 1943

Brass, Commercial; bars, plates, rods, shapes, sheets, and strips (amendment 3) QQ-B-611a May 15, 1943

Brushes, Paint; metal-bound, flat (utility-wall) (superseding E-H-B-436, 10/5/42) (amendment 1) H-B-436 May 15, 1943

Clocks:

- pendulum for general purposes (amendment 2) GG-C-451 May 15, 1943
- synchronous-motor (amendment 2) (GG-C-466 May 15, 1943

Compound: cleaning, soap-abrasive-type (for painted surfaces) (new) P-C-565 May 15, 1943

Drifts; drill (new) GGG-D-641 May 15, 1943

Fire-Alarm Systems; electric, hand-operated (amendment 1) W-F-391 May 15, 1943

Fire-Alarm-Systems; electric, hand-operated, shunt-type (amendment 1) W-F-396 May 15, 1943

Iron and Steel: sheet, zinc-coated (galvanized) (amendment 2) QQ-I-716 May 1, 1943

Laundry Appliances and Wool-Presses (tailor-shop) (superseding OO-L-131b, 8/20/37) OO-L-131c June 1, 1943

Needles; surgeons (suture) (new) GG-N-211 May 15, 1943

Federal Specifications—(Continued)

Paint:

- concrete and masonry, exterior, eggshell-finish, ready-mixed, white and tints (new) TT-P-24 May 15, 1943
- oil, interior, one-coat-flat, heavy-bodies (for thinning), light tints and white (combined sealer, primer, and finish) (new) TT-P-47 May 15, 1943

Panelboards; equipped with automatic circuit-breakers (amendment 1) W-P-131a June 1, 1943

Paper; duplicator, liquid process (new) UU-P-231 May 15, 1943

Pipe; steel and ferrous-alloy, wrought, iron-pipe-size (amendment 2) WW-P-403a June 15, 1943

Polish; metal (amendment 1) P-P-556a May 15, 1943

Soap; low-titer (for low-temperature washing) (new) P-S-600 May 15, 1943

Steel; carbon (low-carbon), sheets, and strips (new) QQ-S-636 May 15, 1943

Steel, Structural (Including Welding) and Rivet; for bridges and buildings (superseding QQ-S-711a, 8/27/37, and QQ-S-721a, 8/27/37) QQ-S-741 May 15, 1943

Tapes; measuring, general-use (new) GGG-T-106 May 15, 1943

Time-Stamps (amendment 1) GG-T-406 May 15, 1943

Watchmen's-Report-Apparatus (amendment 1) W-W-101 May 15, 1943

Emergency Alternate Federal Specifications

(Prepared in collaboration with the War Production Board)

Fuses:

- Cartridge, Inclosed, Renewable (Fusible Links Not Separately Inclosed); and renewable links therefor E-W-F-803a April 3, 1943
- Cartridge, Inclosed, Renewable (Fusible Links Separately Inclosed) E-W-F-805 April 3, 1943

Oilers and Fillers; hand (superseding E-RR-O-376, 7/7/42) E-RR-O-376 April 12, 1943

Packing, Rubber; cloth-insertion (superseding E-HH-P-151a, 8/7/41) E-HH-P-151a April 3, 1943

Receptacles (Convenience Outlets); attachment plugs, current taps, and connectors E-W-R-151 March 17, 1943

Receptacles, Waste-Paper; fiber, office and lobby (superseding E-LLL-R-191a, 9/25/42) E-LLL-R-191a April 3, 1943

U. S. Department of Labor (Washington, D. C.)

Advisory Standards for Employment Involving Exposure to Chlorinated Solvents No. 5 February, 1943

U. S. Office of Civilian Defense (Washington, D.C.)

Traffic Control During Blackouts OCD Publication 3062 March, 1943

U. S. Bureau of Home Economics Is Reorganized

Dr. Louise Stanley, member of the Standards Council of the American Standards Association since 1939, has resigned as Chief of the Bureau of Home Economics to become Special Assistant to the Administrator of the Agricultural Research Administration.

This Administration is made up of seven bureaus of the U. S. Department of Agriculture, including the Bureau of Home Economics. In the general reorganization the division of protein and nutrition research, a part of the former Bureau of Agricultural Chemistry and Engineering (now the Bureau of Agricultural and Industrial Chemistry), was transferred to the Bureau of Home Economics. The bureau now becomes the Bureau of Human Nutrition and Home Economics in place of the former Bureau of Home Economics.

Dr. Henry Sherman, noted authority on nutrition, is chief of the Bureau of Human Nutrition and Home Economics succeeding Dr. Stanley.

New Foreign Standards Now in ASA Library

THE following new and revised standards, just received by the American Standards Association, may be borrowed by ASA Members, or ordered through the ASA Library.

Argentina

IRAM 2-N.P.	Most Common Units and Symbols.
IRAM 101-N.P.	General Conditions for Delivery and Mechanical Tests of Metallic Materials.
IRAM 111-N.P.	Test of Zinc Coating.
IRAM 501-N.P.	Definition and Designation of the Principal Iron and Steel Products.
IRAM 504-N.P.	Steel Plates for the Construction of Steam Boilers.
IRAM 1001-N.P.	Raw Linseed Oil for General Purposes.
IRAM 1002-N.P.	Boiled Linseed Oil.
IRAM 1005-N.P.	Titanium Dioxide.
IRAM 1008-N.P.	Barytes, Natural Barium Sulphate.
IRAM 2002-N.P.	Copper for Electrical Conductors.
IRAM 2013-N.P.	Standard Current ratings.

Australia

Fuel Oil Installations, Code for No. CB5-1942

Canada

Canadian Electrical Code, Part 2
- Synthetic-Insulated Wires and Cables C22.2-No. 75-1943
- Varnished-Cloth-Insulated Wires and Cables C22.2-No. 78-1943
- Weatherproof (Neutral) Wires and Cables (Type WPN) C22.2-No. 79-1943

Blackout Requirements for Highway Movement CESA/ARP No. 505

Great Britain

Revised British Standards

Glossary of Terms Used in Electrical Engineering
- Section 2, Machines and Transformers (superseding part of BS205-1936) BS205-Pt.2-1943
- Section 3, Switchgear and Control Gear
- Section 4, Meters and Measuring Instruments (superseding part of BS205-1936)

} BS205-Pt.3-1943

Sockets for Wire Ropes for General Engineering Purposes (superseding BS463-1932) BS463-1943

Traffic Paints (superseding BS/ARP38-1940 and supplement dated July, 1942) BS/ARP38-1943

New British Standards

Boots and Shoes (amendments to BS/BOT6,7,8,9,10,21 and 22) BS/BOT26-1943

Cold Forged Mild Steel Rivets for Cold Closing BS1109-1943

Mastic Asphalt for Damp-Proof Courses and Tanking BS1097-1943

Services Schedule of Non-Ferrous Metals and Alloys for Armaments and General Engineering Purposes BS/STA7-1942

British Standards—(Continued)

Universal Decimal Classification
- Class 50—General Works on Pure Science
- Class 51—Mathematics
- Class 52—Astronomy and Geodesy
- Class 53—Physics

} BS1000-Vol 2-Pt 1

- Class 55—Geology and Geophysics
- Class 56—Paleontology
- Class 58—Botany
- Class 59—Zoology

} BS1000-Vol 2-Pt 3

Amendment to British Standards

Methods for the Analysis and Testing of Coal and Coke PD85 (amendment to BS1016-1942)

Revised British War Standards

Ready-Mixed Paints, Priming Paint, Undercoating Paints, Finishing Coat Paints and Oil Gloss BS929-1943 (superseding BS929-1940)

Rubber Hose with Cotton Braided Reinforcement BS796-1943 (superseding BS796-1938)

Rubber Hose with Woven Fabric Reinforcement BS924-1943 (superseding BS924-1940)

New British War Standards

Cotton Fabrics for the Reinforcement of Rubber Hose BS1103-1943

Dimensions of Drilling Jig Bushes BS1098-1943

Glazed Tile Fireplaces BS1108-1943

Metric Screw Threads Systeme-Internationale BS1095-1943

Radio Valves in Equipment, Use of BS1106-1943

Rubber Suction and Discharge Hose with Woven Fabric and Wire Reinforcement BS1102-1943

Sizes of Photographic Paper BS1112-1943

Wartime Finish of Machinery and Plant BS1114-1943

Wood Wool Building Slab BS1105-1943

Amendments to British War Standards

Automobile Lamp Bulbs PD90 (amendment to BS941-1941)

Bus-Bars and Bus-Bar Connections PD73 (amendment to BS159-1932)

Cables for Ships PD86 (amendment to BS883-1940)

Engineering Drawing Office Practice PD77 (amendment to BS308-1927)

General Service Lamps PD78 (amendment to BS161-1940)

Indicating Ammeters, Voltmeters, Wattmeters, Frequency and Power-Factor Meters PD84 (amendment to BS89-1938)

Mining-Type Transformers PD47 (amendment to BS355-1939)

Transformers for Power and Lighting PD47 (amendment to BS171-1936)

Draft Standards and Specifications

Analysis of High Purity Zinc and Zinc Alloys by the Polarograph and the Spectograph CG (NF) 2451

Gas Welding of Aluminum and Aluminum Alloys CG (WE) 2555

Natural Rock Mastic Asphalt for Roofing (6-10% Natural Rock) CG (B) 2301

Test Pieces for Production Control of Aluminum Alloy Spot Welds CG (WE) 2871

Titanium White for Paints, Types 7a and 7b (Titanium White Type 6 on Barium Sulphur Base) CG (C) 2614

British Standards—(Continued)

Standards for Aircraft Materials and Components

Revised Issues

Casein Glue for Aircraft Purposes 4-V-2
Fork Joints (Low Tensile Type) 3-SP-3
Fork Joints (High Tensile Type) 2-SP-7

Amendment Slips

Ash PD66 (amendment 2 to 3-V-4)
Mahogany PD67 (amendment 2 to 4-V-7)
Walnut PD68 (amendment 1 to 3-V-5)
Hexagonal Headed Bolts (Low Tensile Steel) PD80 (amendment 1 to 6-A-1)
Silicon Aluminum Alloy Castings PD81 (amendment 1 to 2-L-33)
Hexagonal Headed Bolts (High Tensile Steel) PD82 (amendment 2 to 2-A-15)
Turnbuckles (Tension Rod Type) PD92 (amendment 2 to SP-8)

New Zealand

Simplified Practice for the Manufacture of
Glass Containers NZSS E103(SP)
Men's, Youths', and Boys' Outer Clothing NZSS E92 (SP)
Men's, Youths', and Boys' Shirts and Pyjamas NZSS E93(SP)
Women's and Girls' Outer Clothing NZSS E94(SP)

South Africa

Asbestos Cement Pressure Pipes S.A. No.20-1942
Dry or Seasoned Timber S.A. No.15-1942
Lime S.A. No.3-1942
Lubricating Oil (Control of Impurities in Re-Refined, Regenerated or Reclaimed Motor Vehicle) S.A. No.1-1942
Wood Charcoal for Use in Portable Gas Producers S.A. No.19-1942

NFPA Issues Code to Prevent Magnesium Powder Explosions

A code for preventing explosions and fires in plants producing or handling magnesium powder or dust has been developed by the NFPA Committee on Dust Explosion Hazards, which also is the American Standards Association Sectional Committee Z12.

The National Fire Protection Association, sponsor for this project, adopted this code as an NFPA standard at its recent annual meeting. Recommendations on this subject were first presented for tentative adoption by the National Fire Protection Association at the 1942 annual meeting. After action by the NFPA Board of Directors in June, 1942, recommendations for handling magnesium powder or dust were published in pamphlet form.

Four successive drafts of this code have been published by the NFPA, each containing important changes from the previous draft to meet new conditions in this rapidly developing industry. At the annual meeting in May of this year, further changes were made. It is expected that this new code will be submitted to the American Standards Association for approval as an American Standard at some later date, when the practices in this industry have become sufficiently crystallized to permit putting this code into permanent form.

Copies of the new Safety Code for Explosion and Fire Protection in Plants Producing or Handling Magnesium Powder or Dust will be available from the National Fire Protection Association in a few months.

Standardization of Labor Statistics

IN order to collect and distribute information on all subjects relating to the international adjustment of conditions of industrial life and labor, the International Labour Office undertook to compile and publish statistics in these fields.

Since methods of compiling statistics varied so greatly in the different countries, the importance of international standardization became obvious. Working closely with other interested organizations since 1923, the ILO has been making steady progress in the dissemination of information regarding labor statistics. As a result of the work done by the Organization, the International Labour Conference in 1938 adopted a Draft Convention concerning Statistics and Wages and Hours of Work, and established a set of minimum standards which may be used by the different Governments.

Conferences are held from time to time by the various agencies concerned and the results of these meetings published. The most recent publication, *The International Standardization of Labor Statistics*, reviews the statistical work of the ILO and of the various international statistical conferences. Such subjects as employment and unemployment, wages and hours of work, the international comparison of real wages and the cost of living, industrial accidents, and many other pertinent topics are covered in this recent ILO report.

Cyril Ainsworth, assistant secretary of the American Standards Association, has taken an active part in the work of the International Labour Office as one of the four American members of the ILO Correspondence Committee on Accident Prevention.

ASTM Issues Compilation Of Plastics Standards

The first edition of a new ASTM compilation of standards on plastics has just been issued. The compilation contains 71 specifications, methods of test, and definitions developed by Committees D-20 on Plastics and D-9 on Electrical Insulating Materials. Thirty of the standards have been developed by Committee D-20 on Plastics which includes many of the country's leading technical authorities. For several years the committee concentrated its work in establishing satisfactory methods of test, improving upon those in use, and more recently it has intensified its work in drafting purchase specifications.

More than 20 of the items included in the publication have been developed as a result of the work of Committee D-9 in the field of electrical insulating materials.

Covered by standard specifications are the following materials: several kinds of molding compounds—phenolic, polystyrene, melamine-formaldehyde, urea-formaldehyde, cellulose acetate, cellulose acetate butyrate;—also sheets, rods, etc, of cellulose nitrate, and cast methacrylate; also, vinyl chloride-acetate resin sheets; phenolic laminated sheet and phenolic laminated tubing for radio applications are covered.

The large number of standard test procedures essential in determining various properties of plastics which are included in the compilation cover the following: arc resistance, resistance to chemical reagents, colorfastness, compressive strength, relative humidity, deformation, distortion, dielectric constant, diffusion of light, flammability, flexural strength, flow temperatures, haze, impact, resistance, mar resistance, punching quality, refractive index, surface irregularities, shrinkage, softening point, tensile properties, tear resistance, thermal conductivities, water absorption, etc.

A descriptive nomenclature and definitions of terms in the plastics field are included.

Copies of the 384-page publication in heavy paper binding can be obtained from the headquarters of the American Society for Testing Materials, 260 South Broad Street, Philadelphia, Pa., at $2 per copy.

Readers Report Data Lists Helpful

In order to determine how INDUSTRIAL STANDARDIZATION is meeting the needs of ASA Members, a questionnaire was sent recently to a small group of 1,600 readers. These readers were asked whether the information contained in the ASA Standards Activities List, the list of Standards Issued by Associations and Government, and the list of Standards in WPB and OPA Orders is helpful and should be continued. They were also asked whether the feature articles about standards contain too much technical material, too little, or whether they are satisfactory.

Replies to the questionnaire were gratifyingly prompt, and represented an unusually large percentage of those to whom the questionnaire was sent. The results, tabulated in percentages, are as follows:

	Should Be Continued	*Should Not Be Continued*	*Indifferent*	*No Answer*
ASA Standards Activities	92.7	1.9	1.5	3.9
Assn and Govt Standards	90.8	4.2	1.5	3.5
WPB and OPA Analysis	71.9	20.4	2.2	5.5

The replies also indicated that in general the material contained in articles is satisfactory.

In view of the overwhelming vote in favor of all the material questioned, these services will be continued. They will be given further study, however, in order to increase their effectiveness wherever possible.

The American Standards Association wishes to extend its thanks to those who replied to the questionnaire. Anyone who did not receive a questionnaire, and who would like to express an opinion on the questions indicated above, is invited to write to the Editor, American Standards Association, 29 West 39 Street, New York 18, N. Y.

Standard Tests and Specifications In WPB and OPA Orders

IN many of the War Production Board and Office of Price Administration orders, standards play an important part, either through reference to existing standards or because standards or simplification schedules are set up in the order itself. Such standards form the basis for control of production, conservation of materials, or for control of prices. The following orders have the effect of setting up standard specifications, tests, grades, or simplification schedules.

War Production Board

Blankets (Conservation Order M-298)

Restricts blankets to the sizes, weights, and specifications outlined. (See page 185.)

Chlorine in Pulp, Paper, and Paperboard (Limitation Order L-11 as amended April 30, 1943)—

Specifies brightness ceilings for different grades of each type of paper.

Construction Machinery and Equipment Simplification and Conservation (Limitation Order L-217)

Bituminous Patch Plants (Schedule XIV)—

Limits production of such plants to one model in each of the following sizes: (1) 10 tons per hour capacity; (2) one size only between 15 and 30 tons per hour capacity.

Asphalt Surface Heaters (Schedule XV)—

Limits production of these heaters to one model of the 4 ft by 6 ft size (24 sq ft area).

Conveying Machinery and Mechanical Power Transmission Equipment (General Limitation Order L-287)

Portable Conveyors—

Schedule A restricts and limits the use of metal in portable conveyors, and includes a Weight Table listing the maximum quantity of metal which is permitted in each type of conveyor.

Hand Tools Simplification (Limitation Order L-157, as amended April 9, 1943)

Heavy Forged Hand Tools (Schedule IV, Appendix A)—

Places limitations on finishes of faces, bits, points, and other commonly ground parts of a heavy forged hand tool, on sizes of handles, and shapes and dimensions of eyes. Restricts producers to not more than one grade, finish, or kind of steel for the tools listed in the order. Gives tables of dimensions and specifications for Bars; Blacksmiths' Anvil Tools; Hammers, Mauls, and Sledges; Hoes; Mattocks; Picks; Railway Track Tools not elsewhere Classified; Tongs; Wedges; and Miscellaneous Forged Hand Tools, Mine Blasting Hand Tools, and Mine Breast Drills.

Hosiery, Men's, Women's, Children's, and Infants' (Limitation Order L-274, as amended May 11, 1943)—

Restricts production of hosiery to the specification provided in this order. These specifications provide the gauge, minimum fineness of yarn, minimum turns per inch for both welt and leg, minimum total courses, and minimum fineness of heel and sole splicing, and toe reinforcing yarn.

Incandescent Lighting Fixtures (Limitation Order L-212)

Limits ferrous metal sheets used in manufacture of industrial incandescent lighting fixtures to a gauge not heavier than 22 U. S. Standard for a fixture designed to use a bulb of 750 or more watts; and to a gauge not heavier than 24 U. S. Standard for a fixture designed to use a bulb of less than 750 watts. Also limits the type of materials which may be used in the manufacture of residential and utility incandescent lighting fixtures.

Knit Underwear, Sweat Shirts, and T Shirts (Limitation Order L-247, as amended May 7, 1943)

Limits the number of models of each type of underwear to those listed in the order.

Lumber (General Conservation Order M-279, as amended April 19, 1943)

Yellow Poplar—

Outlines basic specifications and grading rules to which the lumber must conform.

Motorized Fire Apparatus (General Limitation Order L-43, as amended April 16, 1943)—

Limits production of motorized fire apparatus. Pumpers, for example, are limited to those which carry centrifugal pumps of either 500 or 750 gpm capacities as rated by the National Board of Fire Underwriters, and which conform to the "Specification of the War Production Board"; and to pumpers which carry centrifugal pumps of 1250 gpm capacity, as rated by the National Board of Fire Underwriters provided that the specifications for such pumpers shall be submitted to the War Production Board. The "Specification of the War Production Board" for 500 and 750 gpm pumpers is on file at the offices of the Safety and Technical Equipment Division of the WPB, Washington, D. C.

Paper, Standardization and Simplification (Limitation Order L-120, as amended April 24, 1943)

Fine Writing Papers (Schedule III)

Revises the paragraphs defining standard grades, colors, weights, and sizes.

Pipe Fittings: Simplification (Limitation Order L-288)

Grey Cast Iron, Malleable Iron and Brass and Bronze Pipe Fittings:

Simplification—

Lists the sizes of pipe fittings which may be produced under the WPB simplification program.

National Emergency Specifications for Steel Products (Limitation Order L-211)

Oil Country Tubular Goods (Schedule 9)

Restricts production of oil country tubular goods to that specified in American Petroleum Institute Specification for Casing, Drill Pipe, and Tubing (API Standard No. 5-A, May 1942 and supplement No. 1 thereto, dated December 1942) or in List 1 attached to this Schedule.

Water Well Tubular Products (Schedule 10)—

Prescribes standards for the manufacture of these products, restricts sizes, dimensions, and weights to those specified in American Iron and Steel Institute Steel Products Manual, Section 18, Steel Tubular Products, and in the American Society for Testing Materials Standard Specifications A72-39, Welded Wrought Iron Pipe. All water well tubular products must meet requirements of ASTM Standard Specifications for Welded and Seamless Steel Pipe (A53-42) as amended by Emergency Alternate Provisions EA-A-53, or of ASTM Standard Specifications for Welded Wrought Iron Pipe (72-39).

Other schedules of the National Emergency Specifications for Steel Products have been listed in INDUSTRIAL STANDARDIZATION as follows:

December, 1942—Concrete Reinforcement Steel, Schedule 1; Steel Wheels and Tires, Schedule 2; and Barbed Wire, Wire Fence, Poultry Netting and Poultry Flooring (Schedule 3).

March, 1943—Structural Steel Shapes (Schedule 4); Steel Axles and Forgings (Railroad and Transit Services) (Schedule 5); Mechanical Steel Tubing (Schedule 6); Rails and Track Accessories (Schedule 7).

April, 1943—Carbon Steel Plates Schedule 8.

Pumps (General Limitation Order L-246)—

The War Production Board may at any time issue schedules establishing required specifications for pumps to eliminate, reduce, or conserve the use of critical materials. Such requirements may include simplification schedules or standards for pumps or parts; specifications for the operating conditions under which they may be used; restrictions on the numbers of sizes, types, models, or kinds produced, or restrictions on the kinds or quantities of materials used by a manufacturer; or may require substitution of less critical materials for more critical materials.

Radio Replacement Parts: Simplification (Limitation Order L-293)

On and after July 1, 1943, all production of dry electrolytic capacitors, fixed paper-dielectric capacitors, and power and audio transformers and reactors used as radio replacement parts shall be in accordance with the American War Standards covering these parts. The American War Standards referred to are C16.7-1943 approved by the American Standards Association February 16; C16.6-1943, approved February 16; and C16.9-1943, approved March 29.

Rubber and Products and Materials of which Rubber is a Component (Maximum Price Regulation 200, Amendment 6)

Rubber Heels, Rubber Heels Attached, and Attaching of Rubber Heels—

Defines Grades V-1, V-2, V-3, and V-4 as heels made in whole or in part of rubber manufactured after August 31, 1942, which can meet the physical tests specified. The methods of test provided in Federal Specifications EA-ZZ-H-141 and ZZ-R-601a are applicable.

Office of Price Administration

Apparel (Maximum Price Regulation 208, Amendment 3)

Staple Work Clothing—

Defines "war model" of staple work clothing as any garment which the manufacturer voluntarily identifies or labels as such as required by Appendix I, and which conforms to the specifications for a first or second quality war model outlined in Appendix K. Ceiling prices for the sale of war models are given in Appendices E, F, and G.

Significance of ASTM Tests on Concrete

The American Society for Testing Materials has just published a report on the significance of tests of concrete and concrete aggregates. This report is a compilation of various papers which discuss the significance, limitations, and applicability of the tests standardized by ASTM, of some tests not yet standardized, and of several tests of a research nature not amenable to standardization.

Copies of this report, *Significance of Tests of Concrete and Concrete Aggregates*, can be obtained from the American Society for Testing Materials, 260 So. Broad Street, Philadelphia, Pa.

ASA Standards Activities

Standards Available Since Our May Issue

Rotating Electrical Machinery American Standard C50-1943 $1.25
Symbols
- Graphical Electrical Symbols for Architectural Plans American Standard Z32.9-1943 20¢
- Graphical Symbols for Power, Control and Measurement American Standard Z32.3-1943 40¢
- Symbols for Telephone, Telegraph and Radio Use American Standard Z32.5-1943 30¢

Weather-Resistant (Weatherproof) Wire and Cable (URC Type) American Standard C8.18-1942 25¢

Standards Approved

Accelerated Aging of Vulcanized Rubber by the Oxygen-Pressure Method, Methods of Test (ASTM D572-42) American Standard J4.1-1943
Accelerated Aging of Vulcanized Rubber by the Oven Method, Methods of Test (ASTM D573-42) American Standard J5.1-1943
Backflow Preventers in Plumbing Systems American Standard A40.6-1943
Letter Symbols for Heat and Thermodynamics Including Heat Flow American Standard Z10.4-1943
Railroad Highway Grade Crossing Protection American Standard B8.1-1943
Reference Data and Arrangement of Periodicals American Standard Z39.1-1943
Road and Paving Materials A37
Methods of Test
- Determination of Bitumen (ASTM D9-42) American Standard A37.3-1943
- Amount of Material Finer Than No. 200 Sieve in Aggregate (ASTM C117-37) American Standard A37.4-1943
- Specific Gravity and Absorption of Coarse Aggregate (ASTM C127-42) American Standard A37.5-1943
- Specific Gravity and Absorption of Fine Aggregate (ASTM C128-42) American Standard A37.6-1943
- Abrasion of Coarse Aggregate by Use of the Los Angeles Machine (ASTM C131-39) American Standard A37.7-1943
- Sieve Analysis of Fine and Coarse Aggregates (ASTM C136-39) American Standard A37.8-1943
- Distillation of Tar Products Suitable for Road Treatment (ASTM D20-30) American Standard A37-.9-1943
- Softening Point of Bituminous Materials (Ring-and-Ball Method) (ASTM D36-26) American Standard A37.10-1943
- Ductility of Bituminous Materials (ASTM D113-39) American Standard A37.11-1943
- Proportion of Bitumen Soluble in Carbon Tetrachloride (ASTM D165-42) American Standard A37.12-1943
- Residue of Specified Penetrations (ASTM D234-36) American Standard A37.13-1943
- Sieve Analysis of Mineral Filler (ASTM D546-41) American Standard A37.14-1943

Standards Approved—(Continued)

Threaded Cast-Iron Pipe for Drainage, Vent, Waste Services American Standard A40.5-1943

Standards Being Considered by ASA for Approval

Basic Sulfate White Lead, Tentative Specifications for (ASTM D82-42T) Revision of American Standard K7-1941
Building Code Requirements for Structural Steel (Riveted, Bolted, or Welded Construction) A57.1
Chemical Analysis of Alloys of Lead, Tin, Antimony and Copper (ASTM B18-36T) Revision of K5-1922
Chrome Yellow and Chrome Orange, Tentative Specifications for (ASTM D211-42T) Revision of American Standard K27-1941
Copper-Base Alloy Forging Rods, Bars, and Shapes, Tentative Specifications for (ASTM B124) Revision of American Tentative Standard H7-1939
Electrical Insulating Materials C59
Methods of Testing
- Sheet and Plate Materials Used in Electrical Insulation (ASTM D229-42) C59.13
- Laminated Tubes Used in Electrical Insulation (ASTM D348-42) C59.14
- Laminated Round Rods Used in Electrical Insulation (ASTM D349-42) C59.15
- Molded Materials Used for Electrical Insulation (ASTM D48-42T) C59.1
- Impact Resistance of Plastics and Electrical Insulating Materials (ASTM D256-41T) C59.11

Photography Z38
- Dimensions of Photographic Papers—Inch Width Rolls Z38.1.5
- Dimensions of Photographic Papers—Centimeter Size Sheets and Rolls Z38.1.6
- Dimensions of Amateur Roll Film and Backing Paper No. 1 Z38.1.7 to No. 9, Z38.1.15 (nine standards)
- Dimensions of Amateur Roll Film Spools No. 1, Z38.1.16 to No. 9, Z38.1.24 (nine standards)
- Method of Determining Photographic Speed and Speed Number Z38.2.1
- Definition of Safety Photographic Film Z38.3.A
- Lens Aperture Markings Z38.4.7
- Picture Sizes for Roll Film Cameras Z38.4.8
- Testing, Printing and Projection Equipment Z38.7.5

Zinc Coating of Iron and Steel
- Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses (ASTM A120-42)
- Zinc-Coated Steel Wire Strand ("Galvanized" and Class A ["Extra Galvanized"]) (ASTM A122-41)

Withdrawal of ASA Approval

Chemical Analysis of Gun Metal American Standard K4-1921
Chemical Analysis of Manganese Bronze American Standard K3-1935
Solder Metal, Tentative Specifications for American Standard H11-1924

American War Standards

Standards Approved and Published

Accuracy of Engine Lathes B5.16-1941 25¢
Allowable Concentration of Cadmium Z37.5-1941 20¢
Allowable Concentration of Manganese Z37.6-1942 20¢

Standards Approved—(Continued)

Code for Electricity Meters (Revision of Paragraph 827) C12WS-1942 10¢
Color, Specification and Description of Z44-1942 25¢

Standards Approved and Published—(Continued)

Components for Military Radio
- Ceramic Radio Insulating Materials, Class L C75.1-1943 20¢
- Ceramic Radio Dielectric Materials, Class H C75.4-1943 20¢
- Electrical Indicating Instruments (2½- and 3½-Inch, Round, Flush-Mounting, Panel-Type) C39.2-1943 50¢
- Fixed Mica-Dielectric Capacitors C75.3-1942 50¢

Domestic Gas Ranges, Approval Requirements Z21.1ES-1942 $1.00

Gas Water Heaters, Approval Requirements Z21.10WS-1942 $1.00

Machine Tool Electrical Standards C74-1942 40¢

Photographic Exposure Computer Z38.2-1942 $1.00

Pressure-Temperature Ratings for Steel Pipe Flanges, Flanged Fittings and Valves (Revision of Tables 6 to 11 inclusive, American Standard B16e-1939) B16e5-1943 25¢

Protective Lighting for Industrial Properties A85-1942 50¢

Protective Occupational Footwear
- Men's Safety-Toe Shoes Z41.1-1943
- Men's Conductive Shoes Z41.3-1943, 2nd Edition
- Men's Explosive-Operations (Non-sparking) Shoes Z41.4-1943
- Men's Electrical-Hazards Shoes Z41.5-1943, 2nd Edition
- Men's Foundry (Molders) Shoes Z41.6-1943, 2nd Edition

} In one Volume 40¢

- Women's Safety-Toe (Oxford) Shoes Z41.2-1943, 2nd Edition 25¢

Replacement Parts for Civilian Radio
- Dry Electrolytic Capacitors (Home Receiver Replacement Type) C16.7-1943 20¢
- Fixed Paper-Dielectric Capacitors (Home Receiver Replacement Type) C16.6-1943 20¢
- Home Radio Replacement Parts, Simplified List C16.8-1943 20¢
- Power and Audio Transformers and Reactors (Home Receiver Replacement Type) C16.9-1943 25¢

Quality Control
- Guide for Quality Control Z1.1-1941
- Control Chart Method of Analyzing Data Z1.2-1941

} In one Volume 75¢

- Control Chart Method of Controlling Quality During Production Z1.3-1942 75¢

Straight Screw Threads for High-Temperature Bolting B1.4-1942 25¢

Standard Available Since Our May Issue

Pressure Ratings for Cast-Iron Pipe Flanges and Flanged Fittings, Class 125 B16a1-1943 10¢

War Project Approved

Allowable Concentration of Styrene Monomer Z37

Standards Under Way

Allowable Concentration of Toxic Dusts and Gases Z37
- Metallic Arsenic and Arsenic Trioxide
- Xylene

Color Code for Lubricants for Machinery Z47

Components for Military Radio C75
- Capacitors
  - Fixed Ceramic-Dielectric Capacitors C75/320*
  - Fixed Molded Paper-Dielectric Capacitors C75/221*
  - Paper-Dielectric Capacitors
- Crystals
  - Crystals and Holders—Aircraft Radio Type
  - Reference Test Set
- Insulating Materials
  - Glass-Bonded Mica Radio Insulators
  - Glass Radio Insulators C75/275*
  - Laminated Thermosetting Plastic Materials (Sheet and Plate)
  - Porcelain Radio Insulators
  - Steatite Radio Insulators
  - Thermoplastic Molded Materials
  - Thermosetting Plastic Materials
- Resistors
  - Composition Potentiometers and Rheostats
  - External Meter Resistors (Ferrule Terminal Styles)
  - Fixed Composition Resistors
  - Fixed Wire-Wound Resistors (Power Type)
  - High Stability Fixed Wire-Wound Resistors (Bobbin or Spool Styles)
  - Wire-Wound Potentiometers and Rheostats
- Vibrators

Cylindrical Fits B4

Goggles and Respiratory Equipment, Standardization and Simplification of Z2

Packages for Electronic Tubes Z45

Protective Occupational Footwear
- Women's Safety-Toe (High) Shoes Z41.7
- Women's Explosives-Operations (Non-Sparking) Shoes Z41.8
- Women's Conductive Shoes Z41.9

Replacement Parts for Civilian Radio C16
- Volume Controls (Home Receiver Replacement Type)

Screw Threads B1
- Acme Screw Threads for Aircraft
- Threading of General Purpose Nuts and Bolts
- Truncated Whitworth Screw Threads

Sizes of Children's Garments and Patterns L11

Welding Arc Hand Shields and Helmets Z2

Women's Industrial Clothes and Safety Clothes L17

Standard Approved Since Our May Issue

Shock-Testing Mechanism for Electrical Indicating Instruments (2½- and 3½-Inch Round, Flush-Mounting, Panel-Type) C39.3-1943

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* Printed draft is available.

News About ASA Standards Projects

Construction Safety Code A10

A revised draft is being circulated to the Sectional Committee for action.

Code for Protection Against Lightning C5

The third draft of a proposed revision of Part III, Protection of Structures containing Flammable Liquids, Gases, Powder, or Explosives, is before the sectional committee for vote.

Protective Occupational Footwear Z41

Three new women's safety shoes standards are in the final stages of development. These are:

Women's Safety-Toe (High) Shoes Z41.7

Women's Explosives-Operations (Non-Sparking) Shoes Z41.8

Women's Conductive Shoes Z41.9

Manufacturers and Users!

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